The Development of the Concept 'Researcher Practitioner Engagement' and an Investigation of its presence in Nursing, Midwifery and Therapies Research and Practice in the United Kingdom

by

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CONTENTS

List of Tables

List of Figures

Page

List of Appendices

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Abstract

A model of healthcare research which is initiated, conducted and disseminated by researchers based in academic environments is perceived to generate evidence which can be irrelevant to frontline practitioners' needs. In order to address the gap which can then result between what is known from research and what happens in clinical practice, engagement of practitioners in the production of research-derived knowledge is advocated. Analysis of published examples of engagement practices ranged from those which marginalise practitioners' opportunity to contribute to knowledge production by adopting a hired hand approach through to co-production examples underpinned by principles of equality and power sharing throughout the research process.

A form of engagement was observed which enabled practitioners to contribute to the knowledge production process but was as yet unlabelled or undefined. To address this conceptual gap, Schwartz-Barcott and Kim's (2000) hybrid model of concept development was adapted to establish the attributes, antecedents and consequences of 'Researcher Practitioner Engagement' the thorough analysis of published instances, related concepts and experiences of academic researchers and frontline practitioners. Valuing practitioners' clinical knowledge from a study's formative stages and ensuring their clinical perspectives inform problem solving and decision making in study activities, formed the concept's essence.

Building on this outcome, an online survey investigated the presence of the concept's components in examples of researcher-initiated engagement with practitioners in the United Kingdom. Despite a low response, behaviours observed highlighted considerations for developing both the concept and the culture of Researcher Practitioner Engagement. This study has contributed to knowledge through publication of reviewed literature, the study findings and novel guidance for researchers planning to use audio-visual technology to conduct focus groups. The conceptual model, produced from the study findings, forms a basis for concept testing and empirical evaluation of engagement practices to further develop an evidence base in this field.

Declaration

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PhD Researcher's contribution: First and corresponding author, drafted and compiled the manuscript, developed search strategy, conducted literature search, analysed retrieved papers, revised manuscript based on co-authors' comments, revised manuscript for re-submission based on reviewers' comments

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Overview: Reports the critical reflections of using audio-visual technology to conduct online focus groups

PhD Researcher's contribution: First and corresponding author, led research design, recruited participants, led on governance approval process, led on data collection process, analysed data, drafted and compiled manuscript, revised manuscript based on co-authors' comments, submitted manuscript to journal, revised manuscript for re-submission based on reviewers' comments

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PhD Researcher's contribution: First and corresponding author, led research design, recruited participants, led on governance approval process, led on data collection process, analysed data, drafted and compiled manuscript, revised manuscript based on co-authors' comments, submitted manuscript to journal

*****Evidence of submission to journal can be found in Appendix 1

CHAPTER ONE - INTRODUCTION

1.1 Background

Evidence-based practice and evidence-informed practice are both approaches to clinical decision making which are adopted by healthcare practitioners (Woodbury and Kuhnke 2014). For many years, the term evidence-based practice has been used across healthcare disciplines. By definition, evidence-based practice refers to the process by which health professionals integrate research-derived knowledge with their clinical expertise and patients' values and preferences (Sackett *et al.* 1996). When healthcare practitioners make a clinical decision, they are required to call upon a range of evidence to assess feasibility, appropriateness, meaningfulness and effectiveness (Jordan *et al.* 2019). Evidence-based practice models are, however, considered heavily reliant on scientific evidence (Kumah *et al.* 2019; Woodbury and Kuhnke 2014). In particular, studies of a quantitative nature are favoured, with a formal hierarchy used to rank evidence types, using a structured approach to evidence application with limited flexibility for practitioners to apply other evidence forms (Kumah *et al.* 2019; Woodbury and Kuhnke 2014).

The more recent adoption of the term evidence-informed practice has stemmed from the perceived need for greater flexibility and creativity in the types of evidence applied to clinical decision making by healthcare practitioners (Kumah *et al.* 2019). Evidence-informed practice emphasises the person-centred nature of evidence, giving greater credence to the importance of expertise and patients' values (Kumah *et al.* 2019; Miles and Loughlin 2011). In addition, it recognises the importance of wider evidence types, such as qualitative research, not widely featured in the evidence hierarchy of EBP models (Kumah *et al.* 2019). Despite distinctions, a key shared characteristic is that both approaches recognise the value of evidence derived from research to the clinical decision-making process. Although not the only form of evidence clinicians will require, and not always the evidence form that dominates (Melynk and Newhouse 2014), both evidence-informed and evidence-based practice illustrate that evidence derived from research is a cornerstone of clinical decision-making, and therefore, healthcare practice.

Within the National Health Service of the United Kingdom (UK), research is described as ‘everyone’s business’, forming a key element of day-to-day operations and integral to clinical decision-making (Department of Health 2015; NHS England 2014). A clear commitment to clinical practice which is informed by the best available research evidence is demonstrated through key policies (Department of Health 2006, 2010, 2015) and increasing research activity (NHS England 2017) aimed at reducing uncertainties, improving care and achieving optimal patient outcomes (Leach and Tucker 2018; Health Research Authority (HRA) 2018). Subsequently, the need to undertake clinical practice informed by evidence which is obtained from research, is indicated in the competencies and standards of practice of healthcare professionals registered in the UK, such as the Nursing and Midwifery Council (2015) and Health and Care Professions Council (2018). Research-derived evidence, therefore, plays a fundamental part in enabling healthcare practitioners to carry out their clinical role.

Despite this, a gap between what is known from research and the reality of what happens in everyday clinical practice is a longstanding and well-versed issue in the health research arena (Greenhalgh 2017; Grimshaw *et al.* 2012). Statistics suggest that up to 45% of patients may not be receiving care based on up-to-date scientific evidence (Thomas *et al.* 2014; McGlynn *et al.* 2003), 25% may be receiving care known to be ineffective or harmful (Graham *et al.* 2019) and reporting of high levels of medical research wastage caused by weaknesses in study design, conduct and reporting which prevent the outcome of studies from being used (Ioannidis *et al.* 2014; Glasziou 2014). Although reasons attributed to this research-practice gap are multifactorial, one often cited contributor are studies conducted by researchers which do not address the needs of frontline practitioners, thereby producing evidence seen to be irrelevant to practice (Greenhalgh 2017; Bowen and Graham 2013).

The conventional nature of how research-derived evidence has been produced in healthcare is no doubt a contributing threat to its practical utility. The linear pathway of original evidence-based practice models created a process of three distinct and sequential elements; generating evidence from research, making evidence available and evidence application (Gray 2009). Within the nursing, midwifery and therapy disciplines, the first steps of this process have traditionally been carried out by researchers based in academic institutions, with responsibility for the final step firmly placed at the door of practitioners who are expected to source, appraise and implement useful findings in their clinical practice (Johnson 2008).

This approach to evidence production, known as Mode 1 (Nowotny *et al.* 2003), is based on a dissemination model (Corcoran 2008) where problem setting and solving are carried out within an academic environment (Nowotny *et al.* 2003) and the outcome is passively made available to practitioners once a study is complete (Oborn *et al.* 2010). The expectation is research utilisation, or more explicitly, that the research “travels to and leads to change in the field for which it is intended” (Gray *et al.* 2015, p.1953). In addition, a Mode 1 model views academic researchers and healthcare practitioners as two distinct communities, situated in different organisations with differing values and cultures, and so separated into those who produce research and those who use it (Wehrens *et al.* 2014; Oborn *et al.* 2010). This divide is exacerbated by the researchers’ drive to produce scientifically robust research and the healthcare practitioners’ need for real life solutions, creating a potential wrangle between clinical relevance and methodological rigour (Rothmore 2018). This approach to knowledge production therefore fails to attend to the needs of practitioners by neither addressing issues that have arisen from practice nor including study processes which reflect the practice context (Corcoran 2008).

Recent years have seen a global cultural momentum of change to bridge the research-practice gap by addressing the availability and application elements of the original evidence-based practice process. Recognition of the need for more effective communication of a study’s findings has led to the Knowledge Translation movement, referred to interchangeably as Knowledge Transfer (Bowen and Graham 2013). Although contributing to enhanced activities in research utilisation and implementation, its focus continues to be directed to post study completion (Bowen 2015) and requires practitioners to draw from the research produced (Pentland *et al.* 2011). This knowledge transfer paradigm, therefore, continues to mirror the principles of a Mode 1 knowledge production approach. It has been argued that the functions of knowledge production and knowledge use within healthcare should not be seen as two distinct entities but as one joined up process (Kielhofner 2005) which acknowledges the needs of practitioners and their role in producing the knowledge required to inform clinical practice (Bowen and Graham 2013; Bartunek *et al.* 2003). Consequently, the issue of research relevance, i.e. external, social, and ecological validity, should be given equal consideration in a study’s design and conduct as that given to the issue of robustness and internal validity has been advocated (Backus and Jones 2013).

In order to achieve this, attempts to bridge the research-practice gap should focus on closer interactions and collaborations between academic researchers and practitioners (Leah and Tucker 2018; Bowen and Graham 2013; Oborn *et al.* 2010) and bring academically based researchers and clinically based practitioners together in a dynamic process (Baumbusch *et al.* 2008). Doing so can increase the relevance of research for its intended users (Goodyear Smith 2017; McCormack 2011) and so produce knowledge which is applicable to practice (Bowen and Graham 2013; Pentland *et al.* 2011). Such an approach cannot only address knowledge production failures by generating research which addresses the issues identified by research users (Graham *et al.* 2018), but also increase research value and reduce levels of unused research (National Institute of Health Research 2019a) whilst increasing practitioners’ capacity to take on board and make use of research findings in practice (Hanney *et al.* 2010; Oborn *et al.* 2010). Practitioners’ experiential knowledge can contribute to achieving this by bringing the contextual realities of the practice area closer to the research. The belief is that the whole is greater than the sum of its parts; bringing together scientific and clinical expertise with varying perspectives, complementary skill sets, and shared common concerns (Dluhy *et al.* 2007). Calls have therefore been made for principles of engagement between researchers and practitioners to be explicit in all healthcare research designs (McCormack 2011).

Over £2 billion per year of government spending in the UK is dedicated to health-related research (Walshe and Davies 2013), with significant increases being seen in the financial resources dedicated to this sector since the turn of the century (UK Clinical Research Collaboration 2015). The Research Excellence Framework (REF), undertaken by the UK higher education funding bodies, now necessitates that researchers plan for and demonstrate ‘an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia’ (Higher Education Funding Council for England 2011, p.26). This system is not only to provide reputational data for UK Universities, but requires them to be transparent and accountable for this public spending, including evidence of the impacts of this investment (UK Research and Innovation 2019). Therefore, the need for university-based healthcare researchers to ensure their research is utilised in practice is now an imperative.

1.2 Study context and justification

The financial landscape of health-related research funding within the United Kingdom is multifaceted, with a complex flow of income and expenditure across a variety of funding streams and research hosts (UK Clinical Research Collaboration 2015). The majority of health-related research in the UK is carried out within Higher Education Institutes (HEIs) (Walshe and Davies 2013). As a consequence, these organisations are central in the health research and development expenditure model (UK Clinical Research Collaboration 2015), receiving the highest proportion of government funding and spending double the amount on health-related research than any other public sector organisations (UK Clinical Research Collaboration 2015). In recent years, the research landscape in the UK has evolved in ways which mean that the drive to increase research capacity within the National Health Service (NHS) is much stronger and the opportunities for practitioners to be actively engaged in research are now much greater. These changes have predominately stemmed from the opportunities created by the establishment of the National Institute for Health Research (NIHR) as a result of the Department of Health's (2006) Best Research for Best Health strategy, which exists to provide a strong infrastructure to drive forward high-quality research within the NHS (Walshe and Davies 2013). This has resulted in a substantial increase in the funding made available to build research capacity within the NHS and led to major developments designed to bring the communities of academia and practice much closer together (Jones *et al.* 2016). Such initiatives are based on formal, government funded, cross organisational models such as the National Institution of Health's £135 Million Applied Research Collaborations (ARC) in England (National Institute for Health Research 2019a). This macro level programme of ongoing work pledges to meet the research needs of local healthcare systems through meso level partnerships between healthcare providers and Higher Education Institutions. These meso systems level models (Pawson 2013) are however, shaped through organisational structures that embed linked relationships and processes and require systems level dynamics, resources and capacity to exist and function effectively (Kislov *et al.* 2018; Best *et al.* 2009). What is less considered are micro, relationship level contexts (Pawson 2013) in which university-based healthcare researchers, who traditionally would have followed a Mode 1 approach, but are not situated within a formal systems level programme of research, employ engagement practices in their research endeavours. Many are now referred to as ‘applied health researchers’, a term used to make the distinction between ‘basic research’ carried out to generate theory and knowledge purely for its own end and ‘applied research’ which is designed to inform decision making on practical issues (Ulin *et al.* 2012). However, it is unclear the extent to which researchers within these academic settings engage practitioners at clinical level in the generation of research-derived evidence, what types of engagement are beneficial and what the outcomes and impacts of these engagements might be (Bowen and Graham 2013). In addition, an evidence base which helps to understand how to operationalise engagement in such a way to realise the benefits postulated is lacking (McCormack 2011).

It is this perceived gap which has driven the focus of inquiry for this study by arousing interest in establishing if university-based healthcare researchers are indeed engaging with frontline practitioners, and when they do, if the postulated claims that the evidence produced becomes more relevant, and hence more likely to be applied in practice, are being met. Although these issues pertain to all healthcare practitioners, a focus is maintained on the disciplines of nursing, midwifery, occupational therapy, physiotherapy and speech and language therapy (with these Allied Health Professionals referred to collectively in this thesis as therapies). Combined, nursing and allied health professions research accounts for £51 million pounds, or two percent, of the government’s annual spending on health-related research in the UK (UK Clinical Research Collaboration 2015). These professional groups share clear similarities in their evidence needs and very often are considered in interdisciplinary realms, both in practice, research and education settings

(Council of Deans 2020; Research Excellence Framework 2019; UK Clinical Research Collaboration 2015).

Explained further in chapter two, this thesis is guided by an engagement paradigm, an antithesis to the knowledge transfer paradigm (Bowen and Graham 2013). Using this as an initial guiding theoretical framework, the first steps to gather data to address this issue followed conventional practice by using existing literature to explore what is already known and so establish knowledge gaps specific to the study context. As detailed in chapter two, a scoping review was carried out to map literature in this field, using specific objectives to draw data from literature in which instances of engagement activities were reported. This preliminary literature-based work unveiled different types of engagement practices by academic based researchers. Using abductive reasoning, a pattern was observed amongst instances of engagement included in the scoping review which appeared to fall outside of the realms of existing theoretical propositions which led to theorising that a type of engagement not yet conceptualised had been observed. This thesis presents an exploratory sequential mixed methods study which firstly addressed this conceptual gap by developing the concept of ‘Researcher Practitioner Engagement’, using its defining elements to propose a conceptual model, followed by investigation of the practice of this concept within the UK health research arena. The specific objectives for this study are presented at the end of chapter two (section 2.7), following presentation of the theoretical framework and assessment of literature in this field.

1.3 Structure of thesis

This study is presented using the thesis with papers format (Institute of Nursing and Health Research, Ulster University 2019); a condensed thesis with three papers submitted for publication in advance of PhD submission. These papers are situated within chapter two (*paper 1*), chapter three (*paper 2*) and chapter four (*paper 3*) and report on the scoping review, evaluative reflection of a data collection method used in phase one of the study and phase one findings respectively. These papers are standalone, each with their own reference list, and have been incorporated into the main body of the thesis so form key elements of this work. Two of these papers have been published, and a third has been submitted for editorial consideration. Within the thesis, a theoretical framework, a review of literature and further rationale for this study will be presented (chapter two), the design of the study methods detailed (chapter three), data collection, analysis and outcomes presented (chapters four and five), findings from Phase 1 and Phase 2 merged (chapter six) and in the final chapter, evaluative consideration is given to the study findings, the contribution this study has made to current knowledge is outlined and further recommendations are made (chapter seven). There has been a conscious effort to limit repetition across the thesis and papers where possible but at times reiteration of certain aspects of the study is required to ensure the reader is provided with the necessary detail to elicit full understanding.

1.4 Summary

This chapter has provided the background to the thesis by outlining the issue under consideration. The context has been presented by specifying the populations and settings on which this thesis will focus. In the next chapter, the theoretical framework which guides this study will be presented, followed by evaluation of the literature base from which the conceptual gap and subsequent study objectives were identified.

CHAPTER TWO - LITERATURE REVIEW

2.1 Introduction

This chapter is presented in two parts. In the first part, consideration is given to the theoretical propositions which consider the key concepts within this thesis, and from which the theoretical framework which guides this thesis was identified. To obtain further insight, a scoping review of nursing, midwifery and therapy literature was then carried out to identify engagement practices reported by academic researchers when conducting a study. This review was accepted for publication in the journal 'Research and Theory for Nursing Practice' and the paper is included below in section 2.3. As will become clear as the chapter unfolds, observations from this review led to a re-evaluation of the theoretical framework which resulted in the identification of a conceptual gap and so informed the specific objectives of this study, presented in section 2.7.

2.2 Selecting a theoretical framework

A theoretical framework provides the 'blueprint' for a study by using appropriate theory to drive and shape all elements including the research questions, conceptualisation of the literature review, the study design and plan for data analysis (Grant and Osanloo 2016; Maxwell and Mittapilli 2010). A clear theoretical framework not only shapes study design, but also enables the usefulness and relevance of the findings and conclusions to be considered within a particular theoretical viewpoint, and so makes explicit how the study is situated within a theoretical context (Grant and Osanloo 2016). Although definitions of the term theory can vary, in general it represents a "set of concepts and propositions that pertains to some actual phenomena" (Maxwell and Mittapilli 2010, p.876) and which "attempt to explain phenomena logically and meaningfully" (Collins and Stockton 2018, p.3). Within a theoretical framework, theory can refer to ideas at a range of levels (Anfara 2008), and so can refer to theory in its broadest meaning to demonstrate why things are believed to work the way they do, show relationships between theories and provide transparent representation of the phenomena under consideration.

The inadequacies of a Mode 1 approach to knowledge production and the threat it places on the practical relevancy and utility of research were asserted in chapter one. Over recent years, concerted moves have been made, nationally and internationally, across the health research landscape to approaches to knowledge production which can overcome the limitations of a Mode 1 approach (Soofi 2018; Greenhalgh *et al.* 2016). Collectively, these approaches are referred to across disciplines as Mode 2 (Nowotny *et al.* 2003), and so it is from this overarching theoretical viewpoint that this study initially evolved. In the next section, an overview of a Mode 2 approach is provided to show how the theoretical framework was then extended to ensure the design of the literature review remained close to the key concepts within this study.

2.2.1 An overview of Mode 2 approaches in healthcare research

The key overlapping concepts within this study are the engagement of frontline healthcare practitioners in the production of research-derived evidence, and the relevancy and utility of research to clinical practice, specifically in relation to the disciplines of nursing and therapy professions. A Mode 2 approach acknowledges the role that practitioners can and should play in the knowledge production process. As its defining principles show (Table

2.1), Mode 2 knowledge production is “socially distributed, application oriented, trans-disciplinary and subject to multiple accountabilities” (Nowotny *et al.* 2003, p.179) and so opposes a Mode 1 approach. Underpinned by social construction principles, such approaches value diverse skill sets, bring together personnel from different organisations, and produce contextually relevant knowledge (Rycroft-Malone *et al.* 2016; Nowotny *et al.* 2003). By doing so, knowledge is diffused during its production, as opposed to disseminated once the process is complete (Hessels and van Lente 2008; Nowotny *et al.* 2003). Mode 2 approaches move away from the traditional view of evidence-based practice as a linear process, to one in which there is clear overlap between the three steps of evidence production, transfer and application, and, therefore, greater likelihood that this evidence will be utilised in practice (Pentland *et al.* 2011).

Table 2.1 The characteristics of Mode 1 and Mode 2 approaches to knowledge production (Research to Action 2015)

DIMENSION	MODE 1	MODE 2
KNOWLEDGE FOCUS	Produced considering interests of the scientific community	Produced considering the context of application
MODE OF KNOWLEDGE PRODUCTION	Expert-centred	Produced in network or with the interaction of diverse actors
CHARACTERISTICS	Disciplinary and hierarchical	Transdisciplinary and horizontal
RELEVANCE	Relevant to the scientific community	Relevant to society
DISSEMINATION	Through indexed journals	Diverse channels reaching a wider audience
QUALITY MARKER	Publication in an indexed journal	Quality review processes and research uptake/policy influence

Within the health research arena, several theoretical and conceptual propositions purport to enable researchers to adopt a Mode 2 strategy.

Participatory research, engaged scholarship, co-production, co-creation, Integrated Knowledge Translation (IKT) and collaborative research are just some of the terms which appear variously and interchangeably across healthcare literature (Gagliardi *et al.* 2017; Greenhalgh *et al.* 2016; Rycroft-Malone *et al.* 2016), with umbrella terms such as partnered research (Graham *et al.* 2019) and engaged research (Irish Research Council 2019) used to refer collectively to such approaches. Based on Mode 2 principles, their shared endeavour is to add value to the knowledge production process and so ensure societal impact, balancing the requirements of scientific rigour with those of community relevance (Greenhalgh *et al.* 2016; Hessels and van Lente 2008). This is achieved by transcending boundaries (Antonacopoulou 2010) to work collaboratively and productively with what are referred to as communities (Greenhalgh *et al.* 2016), stakeholders (Beckett *et al.* 2018; Concannon *et al.* 2019), and/or intended users (Bowen and Graham 2013), and so fulfilling the Mode 2 requirement of a transdisciplinary approach to knowledge production. Such approaches acknowledge that those who can contribute to knowledge production are dispersed across society, not just confined to the academic environment, and so empowers them to make a meaningful contribution (Bell and Pahl 2018).

Although conceptual differences do exist and must be understood when justifying a selected approach (Bowen 2015), there is often little to distinguish between these propositions and many are referred to interchangeably within the literature. Differences most often stem from philosophical underpinnings. The roots of engaged scholarship and participatory methodologies, for example, are emancipatory in nature (Bowen and Graham 2013). Participatory research principles are related to social justice and a desire for social change

(Macaulay 2017) and engaged scholarship places its concerns on all elements of scholarship within the interests of the community, as opposed to purely being research focussed (Van de Ven 2007). Choice of approach will therefore differ, dependent on motivations for the conduct of the research (Jull *et al.* 2017; Bowen 2015).

However, regardless of any conceptual nuances, what appears to be synonymous across Mode 2 approaches in relation to healthcare research, is use of the term co-production of knowledge. In this context, co-production has been adopted as an umbrella term to represent a process through which researchers and those who would benefit, undertake research together to produce knowledge which can be implemented into practice (Antonacopoulou 2010; Armstrong and Alsop 2010). When co-production of knowledge in healthcare is defined or its attributes outlined, congruence with Mode 2 principles is clear. Essential attributes include that different forms of knowledge are valued and that there is a balance of power, equality and sharing of responsibility in decision making across all aspects of the research process (Heaton *et al.* 2016; Rycroft-Malone *et al*. 2016; Cook *et al.* 2017). Research users, such as practitioners, are then referred to as co-researchers to reflect the equality of their role in the knowledge production process (Martin 2010). Where this could be disputed is when co-production is considered a continuum, presented in the form of co-production typologies. Mirroring hierarchical levels which correlate with Arnstein's seminal ladder of participation, with its progressive stages of non-participation, tokenism and citizen power (Arnstein 1969), contemporary examples divide co-production into distinct categories such as consultation, contribution, collaboration and control (Sweeney and Morgan 2009) or label citizens as recipients, endorsers or co-researchers to characterise their role (Martin 2010). Progression from non-participatory to tokenistic activities through to full ‘citizen’ participation is categorised by the level of power afforded to citizens in decision making and equates greater power sharing in making decisions with a greater influence on outcomes. It is only at these higher levels of participation that the defining characteristics of equality and power sharing are deemed necessary and citizens then considered co-researchers (Martin 2010; Nutley 2010). Such typologies, however, contribute to a blurred definition (Nutley 2010) and the challenges in establishing what co-production actually means, as inclusion of these less participatory activities within a co-production typology label these activities as such and so further demonstrate the elasticity of this term (Nutley 2010).

Co-production of knowledge within the healthcare research arena appears to be viewed as a ‘notion’ or ‘a way of seeing things’ (Wehrens 2014); therefore, an approach to research (Graham *et al.* 2019) as opposed to a clearly defined guiding theory. A co-productive lens, however, has a dominant presence within the conceptualisations of theoretical propositions such as engaged scholarship (Van de Ven 2007) and Integrated Knowledge Translation (IKT) (Bowen and Graham 2013), which are described as approaches to co-producing knowledge. Collaborative research projects also share the aim of co-production by involving others as co-producers of knowledge (Phillips *et al.* 2013) but, like co-production, appear to be a conceptual notion as opposed to a theory which has been clearly defined.

The premise that users of healthcare research, including practitioners, should play an active role in the production of research-derived knowledge has also catapulted the concept of stakeholder engagement into the healthcare research agenda to become a key consideration in health research design. Those who have analysed stakeholder engagement in health research literature have found practitioners to be the second most referred to subgroup after patients, public and carers (Camden *et al.* 2015; Concannon *et al.* 2014). It is claimed that stakeholder engagement is needed to improve research relevance (Roehr 2010), however, despite its clear parallels, some have questioned if stakeholder engagement is a co-productive activity or falls under a different approach (Boaz *et al.* 2018). It is difficult to know as yet from its limited consideration, if there are conceptual differences or if these are purely semantic. Regardless, the message is clear, that working collaboratively with relevant communities can strongly contribute to enhancing the pathway to impact (UK Research and Innovation 2020), with funding bodies now requiring transparent demonstration of how stakeholder engagement has and will be embedded in research design (Diabetes UK n.d; Research Councils UK 2017; National Institute of Health Research 2020, 2014).

In Canada, research co-production is termed Integrated Knowledge Translation (IKT) (Graham *et al.* 2019). Its central ethos is to ensure knowledge users have an equal role to researchers in carrying out a study to ensure it is relevant and useful to them (Canadian Institutes of Health Research 2019). Its intersection with other propositions is evidenced by the authors' assertion that the ethos of IKT is in fact a longstanding tradition which has otherwise gone by alternative terms, such as collaborative research, participatory action research, community-based participatory research, co-production of knowledge or Mode 2 research (Canadian Institutes of Health Research 2019). Like Mode 2, IKT's theoretical principles were borne from a recognised need to counteract the limitations of approaches which reinforce a dissemination model and so exclude those who will make use of knowledge from its generation. The authors hail from the Canadian Institutes of Health Research (CIHR), a pioneering force in the development of the Knowledge Translation movement, synonymously referred to as knowledge transfer.

As illustrated by its defining characteristics (Table 2.2), knowledge transfer closely aligns with many elements of a Mode 1 approach to knowledge production (Table 2.1) and traditional linear approaches to evidence-based practice, reinforcing the focus directed after the research has been completed as opposed to being involved in its generation (Bowen 2015; Estabrooks *et al*. 2006). Although driving a culture which endeavours to advance research application, knowledge transfer or knowledge translation does not fully address the gap between the production and use of knowledge (Rycroft-Malone *et al.* 2016).

Table 2.2 The principles of the knowledge transfer and engagement paradigms (Bowen and Graham 2013)

Knowledge Transfer Paradigm	Engagement Paradigm
Assumptions	
Researchers should conduct research; involvement of knowledge users risks the objectivity and rigour of research Research is made available to guide clinical practice Challenges in knowledge uptake are related to appropriate communication and user readiness or capacity to take up new knowledge	Potential users fail to use research results because the research produced does not address priority questions Higher quality, more relevant research results from true collaboration and integrating diverse perspectives To promote knowledge use, potential knowledge users must be engaged in meaningful ways from the beginning of the research process
Process	
Researcher unilaterally makes decisions about: • the research question • study design • data collection approaches • outcome measures • analysis of results • relevance of findings • dissemination of findings	Co-production of knowledge through researchers and users collaboratively making decisions on: • the research question • study design • data collection approaches • outcome measures • analysis of results • relevance of findings • dissemination of findings
Focus	
Focus is on communication and dissemination Recipients use research results	Focus on partnership, power sharing and mutual respect Research and other professional skills and experiential knowledge are needed and equally valued Collaborative engagement between researchers and users facilitates assessment of results and their applicability
Goal	
Greater availability of research Increasing user capacity to use results	Increased application of research through better quality, relevant research

IKT is underpinned by the engagement paradigm, designed to counteract the limitations of the knowledge transfer paradigm and developed from its authors’ strong beliefs that the research-practice gap is a knowledge production issue as opposed to a problem in the way research evidence is transferred to its intended users (Bowen and Graham 2013). Underpinned by a pragmatic perspective and derived from engaged scholarship principles (Bowen and Graham 2013), IKT values research users' different knowledge and perspectives, the realities of the worlds they experience and views knowledge creation as an iterative process as opposed to a product (Nowell 2015). As can be seen from Table 2.2, the key concepts of this thesis are present, with the goal of 'increased application of research through better quality, relevant research' and its roots in the 'co-production of knowledge'. These specific factors make this paradigm of greatest relevance to the key concepts of this study and so therefore most appropriate to focus the theoretical framework and provide the specificity required to guide this study.

Furthermore, IKT proponents are keen to highlight the difference between stakeholders and knowledge users as those who will benefit from the research and those who will actually use the findings (Graham *et al.* 2019). This element highlights an important distinction between IKT and other Mode 2 approaches, specifying the necessity for those who will act on the knowledge that is generated (knowledge users) to be those who are engaged in the research process (Graham and Bowen 2015). Like other Mode 2 propositions, IKT is a transdisciplinary approach with examples of its use with policy makers (Gagliardi *et al.* 2016), mixed user groups (Henderson *et al*. 2014) and patients and the public (Banner *et al.* 2019; McCormick *et al.* 2016). Although the rhetoric of practitioners as knowledge users is included in many conceptual considerations of IKT, examples of IKT practices with this knowledge user group appear more elusive. IKT does not necessarily view these knowledge users as co-researchers or expect them to take on a researcher role (Bowen and Graham 2013). Although the different knowledge and skills sets they bring to the research process are acknowledged, IKT is not intended to teach others how to be researchers or learn research skills, but to bring together different areas of expertise to affect the relevance of a study (Bowen 2015) and therefore, it is driven by the need to engage with the most relevant parties (Nutley 2010).

In producing this paradigm, Bowen and Graham (2013) encapsulate and communicate their view of engagement. Its content suggests a relational assumption, that in order for the goal of relevance to be achieved, decision making in all elements of the research process, as depicted in Table 2.2, should take place. This is synonymous with definitions of co-production, as discussed previously, which also advocate equality and power sharing across the whole research process. Like conceptualisations of co-production, this causal relationship does not appear to have been tested or verified and therefore is not grounded in empirical data and to date supporting research is limited (Graham *et al.* 2018; Gagliardi *et al.* 2016). However, belief in its potential is demonstrated by a recently funded seven-year project in the form of the IKT Research Network, supported by the Canadian Institutes of Health Research (CIHR) and represented by 14 research centres across Canada by researchers who are eminent in this field (IKT Network 2019). A plethora of ongoing projects plan to develop the evidence base for research co-production further, based on IKT principles, including testing the assumptions that engaging users will lead to the production of more relevant and useful findings that can influence clinical decision making (Graham *et al.* 2018).

It is acknowledged that no theory will provide a perfect framework to represent a phenomena and selecting one specific guiding theory could conceal elements (Mertz and Anfara 2014), colour understanding (Leeming 2018) and/or cause a study to be reductionist when restricted by predetermined categories (Anfara 2008). However, as will be detailed in subsequent sections, data collected from literature alongside the critical viewpoint adopted by the researcher, meant analytical consideration and wider thinking outside of the engagement paradigm extended the theoretical framework as the study progressed.

2.3 Introduction to scoping review (*paper 1*)

Several types of literature review are available with differing approaches to sourcing, evaluating, synthesising and reporting the existing evidence in a specific field (Aveyard and Bradbury-Jones 2019; Grant and Booth 2009). Although there are many overlapping characteristics, variations can be seen in purpose, output, strengths and limitations dependent on the method used (Grant and Booth 2009). An initial broad scope suggested that a focussed literature base which directly addressed the specific issue of practitioner engagement by academic researchers was lacking. Preliminary review of the range of Mode 2 approaches and the literature in which these are sited, suggested the majority of publications relating to key concepts within this study are of an advocatory (McCormack 2011) or theoretical nature (Bowen and Graham 2013), and those of a more evaluative nature tend to focus on systems level partnerships (Soper *et al.* 2013; Rowley *et al.* 2012). In addition, although research co-production is certainly a developing topic within healthcare research, it is clear that the literature base is dominated by a focus on working with service users. This is evidenced by the plethora of systematic reviews, evaluations, frameworks and conceptualisations which relate to this group (Greenhalgh 2019; Hickey *et al.,* 2018; Manafo *et al*., 2018; Miller *et al.* 2018; Shippee *et al*. 2015; Brett *et al.* 2014).

It is, however, essential to establish at this stage of a study the extent to which a topic has been explored, what remains not fully understood, and what knowledge is required to remedy such gaps (Booth *et al.* 2016). Inspired to explore if the virtue that health research methodologies should include practitioner engagement is being realised, this study began by systematically scoping healthcare literature for evidence of this activity (Levac 2010; Arksey and O'Malley 2005), with the overarching objective to map or summarise evidence to temperature check the breadth and depth of the literature base in this field (Levac 2010). The aim was to establish if and how academic researchers from university settings engaged practitioners in their research endeavours and, where this evidence existed, to observe how and what was recorded in the reporting of engagement activities. As outlined in the published review, found at the end of this section (*paper 1*), the overarching research question was "Do academic researchers engage with nursing, midwifery and therapy practitioners in the design, conduct and/or implementation of their studies?" More specifically, this review aimed to:

1) identify evidence of engagement of frontline practitioners from the disciplines of nursing, midwifery, physiotherapy, occupational therapy and speech and language therapy by academic researchers to support the research process in published literature;
2) establish the type and level of engagement which is reported;
3) identify reported outcomes, impacts or benefits and how these have been established or evaluated.

Doing so allowed for assessment of the engagement reported against the elements of the engagement paradigm (Table 2.2) by establishing in which steps of the research process practitioners were engaged, if these correlated with the postulated ideal of the engagement paradigm that engagement should occur in all or most research activities, and if the reported outcomes correlated with the goal of increasing the application of the research through better quality, relevant research (Bowen and Graham 2013). Since the review was completed in June 2017, the researcher has re-run the literature search on two occasions, once to search for additional data for inclusion in Phase 1 of the study and later to identify any publications since the initial review search was completed (March 2019). In addition, the researcher has remained close to the literature base in this field through regular database alerts and engagement with key authors through social media platforms such as Twitter and ResearchGate. It is important to reiterate that the review reports on engagement practices which authors have chosen to share in the literature and therefore cannot account for engagement that goes unreported. Indeed, as the review suggests, the inconsistencies observed across the papers reviewed led to the conclusion that there are limitations in the current reporting culture of engagement activities. *Paper 1* is presented below, following which the thesis continues in section 2.4 with a summary of this paper's main findings before then evaluating the types of engagement that were observed in the examples found within this review, using this study's theoretical framework (engagement paradigm).

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Practitioner Engagement by Academic Researchers: A Scoping Review of Nursing, Midwifery, and Therapy Professions Literature

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Background: Engagement of frontline practitioners by academic researchers in the research process is believed to afford benefits toward closing the research practice gap. However, little is known about if and how academic researchers engage nurses, midwives, or therapists in research activities or if evidence supports these claims of positive impact. **Method:** A scoping review was undertaken using the Arksey and O'Malley (2005) framework to identify the extent to which this phenomenon has been considered in the literature. **Results:** An iterative search carried out in CINAHL, Pubmed, Medline, and Embase retrieved 32 relevant papers published 2000 to 2017, with the majority from the last 2-years. Retained papers described or evaluated active engagement of a practitioner from nursing, midwifery, and therapy disciplines in at least one stage of a research project other than as a study participant. Engagement most often took place in one research activity with few examples of engagement throughout the research process. Limited use of theory and variations in terms used to describe practitioner engagement by researchers was observed. Subjective perspectives of practitioners' experiences and a focus on challenges and benefits were the most prominently reported outcomes. Few attempts were found to establish effects which could support claims that practitioner engagement can enhance the use of findings or impact health outcomes. **Conclusion:** It is recommended that a culture of practitioner engagement is cultivated by developing guiding theory, establishing consistent terminology, and building an evidence base through empirical evaluations which provide objective data to support claims that this activity can positively influence the research practice gap.

Keywords: research; practitioner; engagement; research practice gap; scoping review

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Knowledge derived from research is a cornerstone of healthcare and evidence-based practice. Globally, there is a clear commitment and expectation that healthcare practices will be informed by the best available research evidence with the belief that this will result in optimal patient and health outcomes (Leach & Tucker, 2018). Integration of research findings into practice is therefore embedded in the professional standards of nurses, midwives, and therapists who deliver direct care worldwide. However, a plethora of literature documents the consistent and longstanding challenges that practitioners across these professions face in utilizing research within their practice. In 1991, challenges were categorized as relating to the adopter, the organization, the quality of the research, its presentation, and accessibility (Funk, Champagne, Wiese, & Tornquist, 1991). Nearly 30 years on, these challenges remain as recent literature continues to report barriers consistent with these themes (Matikainen, 2017; Pighills, Plummer, Harvey, & Pain, 2013; Scurlock-Evans, Upton, & Upton, 2014). Universally, the term "research practice gap" signifies this notional rift between the knowledge generated from research and that which is used in practice. As this void is predicted to lead to substandard patient outcomes and inefficient use of healthcare resources (Graham et al., 2006; Leach & Tucker, 2018), health professions have a social, fiscal, and ethical responsibility to address the gap between research and practice (Leach & Tucker, 2018).

Traditionally nursing, midwifery, and therapy research has been led by academics based in higher education institutions as opposed to in the practice environment in which research generated evidence will be used (Rowley, Morriss, Currie, & Schneider, 2012). This two communities model (Wehrens, 2014) can result in an investigator led approach which is considered linear, uni-directional, and passive (Baumbusch et al., 2008; Nutley, Walter, & Davies, 2014), and so a key contributor to the gap between the generation of research and its uptake. Interaction between these two communities, that is, knowledge producers and knowledge users, is now viewed as critical to research being used in practice (Bowen & Graham, 2013; Oborn, Barrett, & Racko, 2010; Pentland et al., 2011) and is an often-cited approach to reduce the gap (Leach & Tucker, 2018). Combining scientific and clinical expertize can bring varying perspectives and complementary skill sets to a shared common concern (Dluhy et al., 2007), facilitating knowledge production which has greater potential to be contextually relevant and practicable (Pentland et al., 2011).

Recognition of this has resulted in a shift away from the traditional linear model to more socially constructed approaches (Best & Holmes, 2010; Wehrens, 2014). Engagement and interaction between those who produce and those who use research derived knowledge is a fundamental element of theoretical stances such as Integrated Knowledge Translation (IKT; Bowen & Graham, 2013), coproduction (Heaton, Day, & Britten, 2016), engaged scholarship (McCormack, 2011) and participatory methodologies (Macaulay, 2017). All have the underlying principle that users of research, such as practitioners, should be involved in the research process to cocreate the knowledge that will inform their practice. Most advocate engagement in all stages of the design and conduct of a study. Theory from outside the healthcare remit, shows a potential spectrum of engagement progressing from tokenistic through to democratic partnerships (Arnstein, 1969; Martin, 2010). Greater levels of engagement assume enhanced outcomes with the highest level intended to give ownership of research derived knowledge to increase the chances of application in practice (Martin, 2010).

Within nursing, midwifery, and therapy professions engagement between academics and frontline practitioners in the research process is widely advocated (Baumbusch et al., 2008; Gélinas, 2016; Paget, Caldwell, Murphy, Lilischkis, & Morrow, 2017; Pentland et al., 2011; Pighills et al., 2013) and perceived to impact the design and conduct of a study, clinical practice and individual practitioners' development (Dimova et al., 2018). A strong theoretical case is made that engagement of practitioners in the research process increases relevancy and so can positively impact research implementation potential (McCormack, 2011; Rycroft-Malone et al., 2013). A culture of engaging those who have a stake in healthcare research to have a role beyond that of research participant has been evolving over recent years. This agenda however, has particularly focussed on patient engagement, evidenced through clear organizational mandates (Canadian Institute of Health Research [CIHR], 2014; National Institute for Health Research [NIHR], 2019), funding body stipulations (UK Research and Innovation, 2018), and a surge in scholarly work describing and evaluating this activity (NIHR, 2020; Patient-Centred Outcomes Research Institute [PCORI], 2018). Although evidence of practitioner involvement is clear from reviews of stakeholder engagement activity (Camden et al., 2015; Concannon et al., 2014), this is often as a member of a mixed group and therefore it is difficult to discern evidence specific to the practitioner role or its impact. The contribution that the clinical workforce can make to research is starting to attract recognition (Dimova et al., 2018). However, engagement of frontline practitioners as a discrete stakeholder group appears largely unexplored and a review of this practice specific to these disciplines has not yet been conducted. Accordingly, we set out to establish if and how the phenomenon of academic researchers from university settings engaging nurses, midwives and therapists in the research process, in a role other than as a research participant, has been considered in the literature. Specifically, our objectives were to:

- identify evidence of engagement of frontline practitioners from the disciplines of nursing, midwifery, physiotherapy, occupational therapy, and speech and language therapy by academic researchers to support the research process in published literature
- establish the type and level of engagement which is reported
- identify reported outcomes, impacts or benefits, and establish how these have been established or evaluated
- determine any frameworks, models, or theories used to guide reported engagement practices

METHOD

A scoping review was selected as the most appropriate methodology to address the broad nature of our research question and our desire to explore if and how this phenomenon had been considered in published work. This type of review is defined as a "form of knowledge synthesis that addresses an exploratory research question aimed at mapping key concepts, types of evidence, and gaps in research related to a defined area or field by systematically searching, selecting, and synthesizing existing knowledge" (Colquhoun et al., 2014, p. 1292).

As opposed to other types of review, a scoping review does not synthesis or review the quality of evidence but systematically maps literature in relation to a specific topic (Peters et al., 2015) to ascertain the extent and nature of the evidence within that field (Tricco et al., 2018). This broad approach enabled us to gain a better understanding of the literature base by mapping what is reported to identify both what is known and any gaps in knowledge (Colquhoun et al., 2014). The scoping review followed the five-stage approach proposed by Arksey and O'Malley (2005, p. 22) of (a) identifying the research question; (b) identifying relevant studies; (c) study selection; (d) charting the data; and (e) collating, summarizing and reporting the results. Methodological guidance provided by Levac, Colquhoun, and O'Brien (2010) and the Joanna Briggs Institute (JBI; Peters et al., 2015) were also used.

Stage 1: Identifying the Research Question

The overarching aim of our review was to identify literature which reports on if and how academic researchers based in university settings engage nursing, midwifery, and therapy frontline practitioners from healthcare settings in the design, conduct, and/or implementation of their studies where formal organizational collaborative initiatives are not in place. When developing the research question, the JBI scoping review guidance (Peters et al., 2015) recommends clarification of population, concept, and context. In relation to our aim, we clarified the following components, summarized in Table 1:

Population. This review specifically focused on nursing, midwifery, and therapy (physiotherapy, occupational therapy, speech, and language therapy) frontline practitioners and academic researchers; although the broad term practitioner can refer to a range of job titles, the review concentrated on those whose role is to provide direct clinical care and therefore excluded those in managerial or policy maker roles and practitioners in dedicated research roles. Academic researchers are those employed by a Higher Education Institution or university. We specifically focused on the behavior of researchers outside of formal system level arrangements based on the belief that many Higher Education Institutions in which academic nursing, midwifery, and therapy research is conducted, are not affiliated with formal research practice partnerships.

Concepts. We use the term engagement broadly to refer to involvement in any activity related to at least one stage of the research process (research prioritization,

TABLE 1. Definitions of Key Concepts Within the Research Question

Concept	Definition
Frontline practitioner	A member of the named professions whose role encompasses delivery of care directly to a patient(s).
Academic researcher	Those employed to carry out research by an HEI.
Engagement in research process	Active involvement in at leastone stage of the research process (research prioritization, identifying the topic, protocol design, study conduct, data analysis, dissemination, and/or implementation) other than as a study participant and which was initiated by the academic researcher.
Evaluative papers	A paper in which a defined method is used to evaluate, measure or assess the phenomena under consideration.
Descriptive papers	A paper which provides description of the phenomena under consideration.

identifying the topic, protocol design, study conduct, data analysis, dissemination, and/or implementation) other than as a study participant which has been initiated by an academic researcher to support the design or conduct of a study.

Context. The context for this review was healthcare settings and the disciplines of nursing, midwifery, occupational therapy, physiotherapy, and speech and language therapy.

STAGE 2: IDENTIFYING RELEVANT STUDIES

The databases CINAHL, MEDLINE, PsychINFO, and Web of Science were searched from 2000 to 2017 using a range of key terms to ensure “broad coverage” of available literature (Arksey & O’Malley, 2005). Terms which represent the activity of “engagement” were situated with keywords which identified the practitioner and the researcher using the adjunct function in all databases to search full texts (Table 2). Identification of search terms was iterative; as initial searches revealed further terms which represented a process of engagement between researchers and practitioners these were added. A citation search of all included papers was also conducted. The search was limited to articles published in English with no restrictions placed on country of publication to obtain a global perspective.

TABLE 2. Search Terms Used to Identify Relevant Studies for Inclusion in the Scoping Review

Search Terms
(interact* OR engage* OR involve* OR participat* OR collaborat* OR partner* OR coproduc* OR cooperat* OR cocreat* OR 'integrated knowledge translation') AND (nurs* OR midwi* OR therap* OR practitioner* OR clinician*) AND Researcher*

STAGE 3: STUDY SELECTION

Inclusion and Exclusion Criteria. To be included in the review, papers needed to evaluate or describe an academic researcher's engagement of a nursing, midwifery, physiotherapy, occupational therapy, or speech therapy frontline practitioner in an activity related to at least one stage of their study (research prioritization, identifying the topic, protocol design, study conduct, data analysis, dissemination, and/or implementation) other than as a study participant. Where it was not possible to establish if a paper met the inclusion criteria, the corresponding author was contacted for clarity. Peer reviewed papers from 2000 to 2017 were included to map recent and evolutionary changes in reporting and all types of study designs were considered. Conference abstracts, opinion pieces, and anecdotal accounts in nonpeer reviewed publications did not provide the level of detail required to extract data. A distinct body of literature was found which reports on "specially created health services research-practice partnerships" (Ovretveit et al., 2014), that is, formal partnership initiatives between academic and healthcare organizations based on a systems model. As this review specifically focuses on the behavior of researchers outside of such formal organizational arrangements, it was not appropriate to consider this literature within this review. Following removal of duplicates, 982 titles and abstracts were reviewed against the inclusion criteria by the lead researcher (ND). Where assessment could not be made from the title and abstract, full articles were scanned (n = 415). A sample of full papers (n = 42) were evaluated by two further members of the research team (PG, KC) to ensure concordance with the study criteria. Three hundred and eighty-three papers were excluded (Figure 1) and 32 retained for analysis.

STAGE 4: CHARTING THE DATA

Papers were transferred to NVivo™ qualitative data analysis Software Version 12, to collate, organize, and analyse content and categorize into those which evaluated and those which described engagement. Data were then extracted to capture the purpose of each paper, disciplines concerned, stage(s) of the research process in which engagement was reported, authorship of papers, terminology used

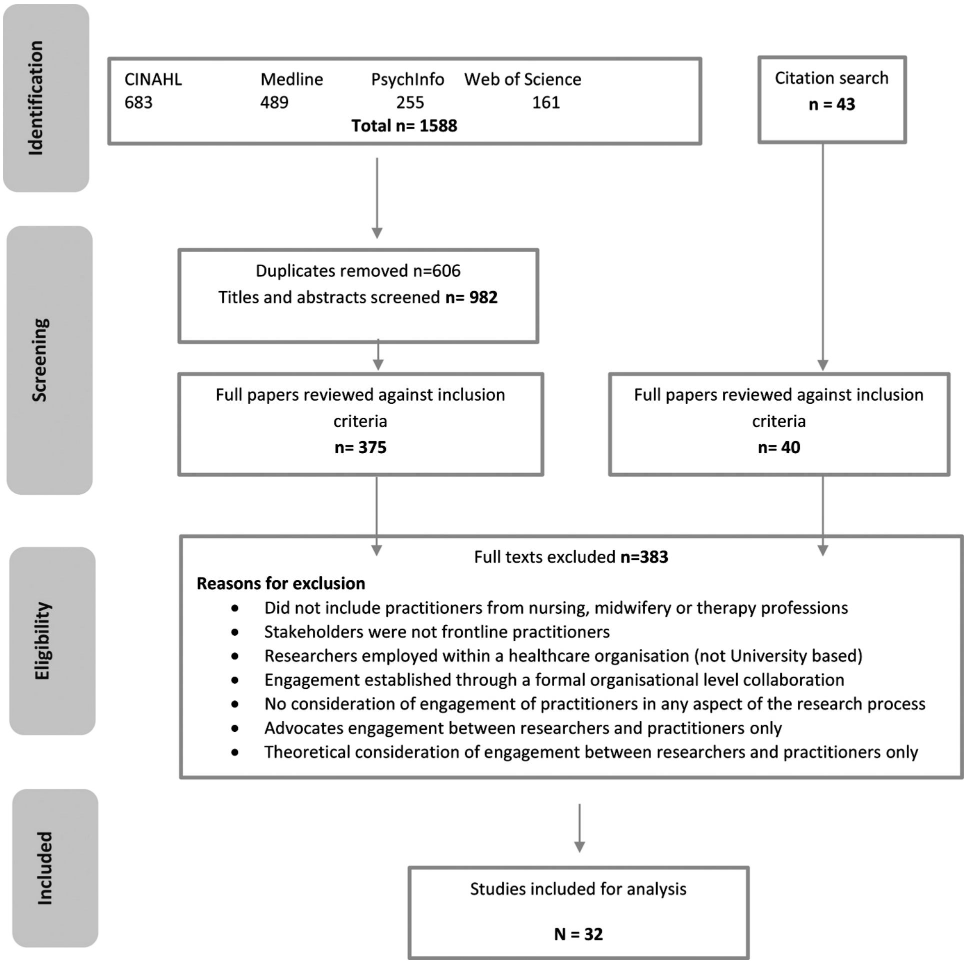

Figure 1. Results of the search process.

to describe the engagement process, any reported underpinning engagement theory which guided the process and reported outcomes. Where possible, the specific activities in which practitioners were engaged were recorded and delineated into the research phases preparation, execution, and translation, in line with previous reviews of patient engagement which have captured similar data (Bethell et al., 2018; Shippee et al., 2015).

Stage 5: Collating, Summarizing, and Reporting the Results

The fifth and final stage of Arksey and O'Malley's (2005) scoping review framework summarizes and reports findings. Results were synthesized using qualitative content analysis techniques to tabulate the data extracted and descriptive statistics used to summarize the characteristics of included articles to align with the review objectives.

FINDINGS

Is There Evidence of Engagement of Frontline Practitioners by Academic Researchers to Support the Research Process?

Evidence of frontline practitioner engagement by academic researchers in the research process was found in 32 papers, all of which were supplementary to reporting of the findings of the original primary study and which explicitly described (*n* = 14) or reported on evaluation (*n* = 18) of the engagement that had taken place. Most papers originated from the United Kingdom (*n* = 10) and United States (*n* = 8; Table 3). The majority were published since 2010 (*n* = 23) with fourteen of these in the latter 2 years (2015–2017). Papers tended to focus on one discipline; nursing (*n* = 10), occupational therapy (*n* = 5), and midwifery (*n* = 4) with others being multidisciplinary or including groups of mixed stakeholders with at least one practitioner from nursing, midwifery, or therapy professions present alongside other health professionals, service users, managers, and/or policy makers. Physiotherapists were represented in two papers, one alongside service users and one with occupational therapists. Speech and language therapists were represented in

TABLE 3. Key Characteristics of Papers Included in the Scoping Review

	Evaluative (*n* = 18)	Descriptive (*n* = 14)	Total (*n* = 32)
Discipline			
Nursing	6	4	10
Midwifery	2	2	4
Occupational Therapy	4	1	5
Multidisciplinary	3	6	9
Mixed Stakeholders	3	1	4
Date of publication			
2015–2017	8	6	14
2010–2014	6	3	9
2000–2009	4	5	9
Country of Origin			
United Kingdom	7	3	10
USA	3	5	8
Australia	2	1	3
Sweden	2	—	2
Japan	2	—	2
Canada	1	2	3
Multiple countries	1	—	1
Jordan	—	1	1
Norway	—	1	1
New Zealand	—	1	1

one multidisciplinary paper. The clinical area of focus varied widely across publications (Tables 4 and 5). Most related to a single study with three reporting on engagement across multiple studies. Reporting of engagement was most frequently reported in Randomized Controlled Trials (RCTs; *n* = 12) and implementation activities (*n* = 8) with the remainder providing examples of action research, qualitative and mixed method studies, prioritization activities, and involvement in updating a systematic review.

WHAT TYPE OF ENGAGEMENT IS REPORTED?

Stages of the Research Process. Papers were analysed to establish the stage(s) of the research process in which academic researchers had engaged with practitioners (Table 6). Six papers appeared to report engagement of practitioners throughout the research process (preparation, execution, translation; Tables 4 and 5). Half of these studies used an action research design (Reed & Hocking, 2013; Khresheh & Barclay, 2007; Hummelvoll & Severinsson, 2005). In a one paper, which reported on development of a research protocol, engagement with a Clinical Nurse Specialist (CNS) in the development of the protocol was evident with clear intent to involve the CNS through all subsequent stages of the research process (Fredericks et al., 2015). In the main, engagement was reported for specific stages of the process and most frequently took place during participant recruitment (*n* = 9), intervention delivery (*n* = 7), or implementation activities (*n* = 8). Engagement in implementation related to the development of evidence-based guidelines (Dufault & Sullivan, 2000; Harrison & Graham, 2012; O'Reilly-de Brún et al., 2018; Renfrew et al., 2008), a practice report (Kothari et al., 2005), a care pathway (Andrew et al., 2013), and an intervention (Eriksson et al., 2017; Sadler et al., 2017). These activities made use of secondary data in the form of existing published research as opposed to the creation of new empirical primary data. Similarly, physiotherapists were engaged by researchers as part of a mixed stakeholder group to update a systematic review (Pollock et al., 2015).

Levels of Engagement. Finlayson et al. (2005) quantified engagement by indicating the range of hours practitioners had dedicated to the study; these varied from 30 to 100 hours. Dyson and Dyson (2014) specifically explored the level of engagement of practitioners who had been asked to collect data alongside their clinical role. Midwives who recruited mothers to an RCT were identified as repairers, refractors, or resisters based on the characteristics of their participation. One quarter were categorized as repairers, that is, they rose to the challenge of the extra workload of research activities and made adjustments to accommodate in order to optimize their contribution. A further quarter were resistors who were unsupportive of the study and collected little data. Half of the midwives refracted through their workload and collected little data resulting in little engagement. Motivation to recruit to an RCT was affected by whether nurses had a say in their involvement or whether they felt put upon when the task was delegated via a colleague (Potter

TABLE 4. Data Capture Table Evaluative Papers

Authors/ Year Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged and Sample Size	Stages of Research Process in Which Practitioners Engaged	Method of Evaluation of Engagement	Focus of Evaluation/Type of Outcomes Reported From Engagement
Andrew, Johnston, and Papadopoulou (2013) United Kingdom	Development of the Dignity Care Pathway	To discuss the participation of community nurses in a collaborative research project to implement a palliative care intervention in practice	Nurses (*n* = 25)	Translation Implementation of the pathway in to routine practice	Qualitative Focus groups (before and after use of the pathway)	Evaluation of experiences of community nurses Practical challenges of participating in a research project
Boase, Kim, Craven, and Cohn. (2012) United Kingdom	A multi-site randomized controlled intervention trial to evaluate the efficacy of a theory-based intervention to support patients in taking their medication as prescribed compared with standard care	To explore the experiences of practice nurses delivering a complex research intervention in an exploratory randomized controlled trial in primary care	Nurses (*n* = 14)	Execution Delivery of study intervention	Qualitative Semi-structured interviews	Evaluation of experiences of nurses Practical challenges of involvement in a research project

(*Continued*)

TABLE 4. Data Capture Table Evaluative Papers (*Continued*)

Authors/ Year Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged and Sample Size	Stages of Research Process in Which Practitioners Engaged	Method of Evaluation of Engagement	Focus of Evaluation/Type of Outcomes Reported From Engagement
Bullen, Maher, Rosenberg, and Smith (2014) Australia	To examine impact on patient outcomes of providing emergency medication kits to home dwelling palliative care patients	To describe the process of implementing a clinical research project in collaboration with clinicians in a palliative care community team	Multidisciplinary palliative care community team (*n* = NR; includes nurses)	Preparation Execution Recruitment Development of data collection tool Delivery of study intervention	Qualitative Written observations by each investigator (examined for recurring thematic patterns)	Identify challenges and/or enablers
Di Bona et al. (2017) United Kingdom	VALID research programme; to develop and evaluate a community occupational therapy programme for people living with dementia	To improve understanding of the challenges and enablers experienced by occupational therapists who deliver an intervention within a research study	Occupational Therapists (*n* = 28)	Execution Participant recruitment Delivery of study intervention Data collection	Qualitative Focus groups	Identify challenges and/or enablers of delivering an intervention within a research study

(*Continued*)

TABLE 4. Data Capture Table Evaluative Papers (*Continued*)

Authors/ Year Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged and Sample Size	Stages of Research Process in Which Practitioners Engaged	Method of Evaluation of Engagement	Focus of Evaluation/Type of Outcomes Reported From Engagement
Dufault and Sullivan (2000) USA	Pain management To examine guidelines and recent innovations of research in pain management and generate a standard of care based on that research	To answer 'does involving clinicians in generating and evaluating a research-based pain management standard lead to changes in practice and improve outcomes for patients'?	Nurses (n = 38) Physiotherapist (n = 1)	Translation Implementation (research-based practice standard) Dissemination (conference presentation)	Quantitative A 2-group, pretest-intervention-posttest, quasi-experimental clinical trial Clinical outcomes	Determine if involving practitioners led to changes in practice and patient outcomes
Dyson and Dyson (2014) United Kingdom	Ethnicity Questions and Antenatal Screening for Sickle Cell/Thalassaemia RCT	To examine the role of midwives in a RCT	Midwives (n = 62)	Execution Collecting and entering data	Qualitative Questionnaires; notes at workshops; notes written by the authors after field encounters; review of letters and emails pertaining to the project	Determine level of engagement in research tasks

(*Continued*)

TABLE 4. Data Capture Table Evaluative Papers (*Continued*)

Authors/ Year Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged and Sample Size	Stages of Research Process in Which Practitioners Engaged	Method of Evaluation of Engagement	Focus of Evaluation/Type of Outcomes Reported From Engagement
Eriksson, Tham, and Guidetti (2013) Sweden	Evaluation of a new CCSCI for persons with stroke in a RCT(Pilot study)	To describe occupational therapists' expectations and experiences of integrating a new intervention programme within an RCT pilot study in collaboration with a researcher	Occupational therapists ($n = 6$)	Execution Delivery of intervention	Qualitative Grounded Theory Paired and group interview before and after intervention delivery Written reflection Protocols collected from researcher and participating occupational therapists'	Evaluate experiences of occupational therapists
Eriksson, Erikson, Tham, and Guidetti (2017) Sweden	RCT; Life after stroke	To identify and describe the process of how occupational therapists in collaboration with a researcher implemented a client-centred ADL intervention for persons with stroke	Occupational therapists ($n = 33$)	Translation Implementation of intervention	Qualitative longitudinal data collection Focus groups (2, 6, and 12 months	Evaluate experiences of occupational therapists

(*Continued*)

TABLE 4. Data Capture Table Evaluative Papers (*Continued*)

Authors/ Year Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged and Sample Size	Stages of Research Process in Which Practitioners Engaged	Method of Evaluation of Engagement	Focus of Evaluation/Type of Outcomes Reported From Engagement
Finlayson, Shevil, Mathiowetz, and Matuska (2005) USA	RCT to examine the effects of a 6-week educational energy conservation course for people living with multiple sclerosis	To ask occupational therapists who were involved in an RCT to reflect on experiences and whether these influenced how they think about or undertake their practice	Occupational therapists (n = 8)	Execution Delivery of intervention, screening of study participants (involvement ranged from 30 to 100 hours)	Qualitative Written questionnaire using open ended questions	Evaluate experiences of occupational therapists
Fujimoto, Kon, Takashi, Otaka, and Nakayama (2015) Japan	Multiple projects	To investigate the degree of collaboration between practitioners and researchers through research papers related to the implementation of ES for stroke patients	Research papers (n = 165) Rehab (Occupational therapists & physiotherapist)	Translation Dissemination	Literature based Systematic Review	Determine level of engagement of practitioners
Ishimaru, Yamada, Matsushita, and Umezu (2016) Japan	Multiple collaborative projects	To evaluate the effects of participation in (multiple) collaborative research-based project	Nurses (n = 33)	Various (multiple projects)	Qualitative Quantitative Survey (n = 25) Group interviews (n = 15)	Evaluate experiences of nurses

(*Continued*)

TABLE 4. Data Capture Table Evaluative Papers (*Continued*)

Authors/ Year Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged and Sample Size	Stages of Research Process in Which Practitioners Engaged	Method of Evaluation of Engagement	Focus of Evaluation/Type of Outcomes Reported From Engagement
Khodyakov et al. (2017) USA	Comparative analysis of stakeholder experiences with an online approach to prioritizing patient-centered research topics	To compare patients and professionals' experiences with OMD conducted to identify research priorities	Patients ($n = 133$) Professionals ($n = 159$; physicians, nurses, dieticians, and other clinicians)	Preparation Prioritization of research topics	Quantitative Participant experience survey using Likert scales	Evaluate experiences of using a specific engagement strategy
Kothari, Birch, and Charles (2005) Canada	Commissioned report on breast health practices report	To determine if interaction between researchers and users promoted the utilization of research findings PHU teams involved in assisting researchers with a report based on secondary analysis of existing data	Six Public Health Unit breast care teams (Nurses, manager, admin support)	Translation Implementation of breast health practices report	Qualitative Group interviews	Determine if utilization of findings was promoted

(*Continued*)

TABLE 4. Data Capture Table Evaluative Papers (*Continued*)

Authors/ Year Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged and Sample Size	Stages of Research Process in Which Practitioners Engaged	Method of Evaluation of Engagement	Focus of Evaluation/Type of Outcomes Reported From Engagement
O'Reilly-de Brún et al. (2018) International	RESTORE (Research into Implementation Strategies to Support Patients of Different Origins and Language Background in a Variety of European Primary Care Settings)	To explore stakeholders' and researchers' experiences of PLA techniques for data generation and coanalysis	78 stakeholders (8 Nurses; Plus GPs, service providers, service planners)	Translation Implementation (of GTIs)	Qualitative Participatory speed evaluations	Evaluate use of a specific engagement strategy
Pollock et al. (2015) United Kingdom	Updating of a Cochrane review of physiotherapy treatment following a stroke	To explore the perceived impact of involvement of users in updating a Cochrane review	Physiotherapists (*n* = 9; Plus 4 service users)	Translation Categorization of categories within systematic review, inclusion criteria, consensus on key message of review	Quantitative Brief evaluation Likert scale and open comments (stakeholder perspective *n* = 9) Description of perceived impact of involvement from researcher perspective	Explore perceived impact of involvement of users in updating a Cochrane review

(*Continued*)

TABLE 4. Data Capture Table Evaluative Papers (*Continued*)

Authors/ Year Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged and Sample Size	Stages of Research Process in Which Practitioners Engaged	Method of Evaluation of Engagement	Focus of Evaluation/Type of Outcomes Reported From Engagement
Potter, Dale, and Caramlau (2009) United Kingdom	RCT to promote adherence to treatment and increase feelings of self-efficacy for people with type 2 diabetes through the provision of telephone Support	To explore practice nurses' experience of participatingin research and to learn how this may have influenced recruitment for a primary care-based RCT	Nurses (n = 10)	Execution Participant recruitment	Qualitative Semi-structured interviews	Explore nurses' experiences in their role as a recruiter and their perception of factors which influenced recruitment rates
Stockwell-Smith, Moyle, Kellett, and Brodaty (2015) Australia	Mixed methods study to establish the effectiveness of working with dementia dyads (person with dementia and family caregiver) in the early stages of dementia	To explore the practical aspects of psychosocial intervention implementation and acceptance to determine the feasibility of using a community aged care practitioner workforce to deliver the (study) intervention	Registered nurses (n = 3) and Personal care workers (n = 20) NB: *only one registered nurse and six Personal Care Workers took part in the postintervention interviews*	Execution Delivery of intervention	Qualitative Semi-structured interviews	Identify challenges and/or enablers of staff participation and delivering study intervention

(*Continued*)

TABLE 4. Data Capture Table Evaluative Papers (*Continued*)

Authors/ Year Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged and Sample Size	Stages of Research Process in Which Practitioners Engaged	Method of Evaluation of Engagement	Focus of Evaluation/Type of Outcomes Reported From Engagement
Stuart, Barnes, Spiby and Elbourne (2015) United Kingdom	Multisite Randomized Controlled Trial aimed to examine if provision of gFNP compared to routine antenatal and postnatal services could reduce risk factors for child maltreatment	To investigate the perceptions of community midwives about their role in identifying potential participants in an RCT	Midwives (13 out of a possible 304)	Execution Identification and recruitment of participants	Qualitative Semi-structured interviews	Identify midwives' perceptions of practical challenges to their research role

Note. ADL = Activities of Daily Living; CCSCI = Client Centered Self-Care Intervention; ES = electrical stimulation; gFNP = Group Family Nurse Partnership; GTIs = guidelines and training initiatives; NR = Not reported; OMD = Online Modified Delphi panels; PCORI = Patient Centered Outcomes Research Institute; PHU = Public Health Unit; PLA = Participatory Learning and Action; RCT = Randomized Controlled Trial; VALID = Valuing Active Life in Dementia.

TABLE 5. Data Capture Table Descriptive Papers

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
Albers and Sedler (2004) USA	Randomized Controlled Trial; methods to lower genital tract trauma	To report on pros and cons of involvement in research	Midwives (n = 12)	Execution Performed pilot studies, tested data form, collected data, reviewed data analyses, planned new projects	Benefits and challenges
Burford, Park, Dawda, and Burns (2015) Australia	Exploratory study that introduces mobile tablet devices for the management of type 2 diabetes	To report on the participatory research design of the study	GP, Practice Nurse, Dieticians, Psychologists (n = NR)	Preparation, Execution Contributed to study “intervention” through facilitated workshops to elicit knowledge and opinions	Authors acknowledged the positive influence of healthcare practitioners on the design outcomes of this study

(*Continued*)

TABLE 5. Data Capture Table Descriptive Papers (*Continued*)

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
Campbell, Skidmore, Whyte and Matthews (2015)	Stroke rehabilitation clinical trials	Describes experiences of researchers who became a nearly constant presence in the stroke rehabilitation unit to overcome practical and methodological challenges in designing and conducting inpatient stroke rehabilitation clinical trials	Rehabilitation professionals (*n* = NR)	Execution Clinicians: sought out researchers for scheduling concerns and to alert researchers to changes in patients' condition that might impact research assessments Offered perspectives regarding variables of interest and operational considerations of conducting studies Researchers refined research procedures to accommodate the clinical team's concerns Authors on manuscripts Researchers mentored clinical staff seeking research grants, provided continuing education programs, presented at unit journal clubs	Researchers perceptions of benefits to participants, clinicians, and research team

(*Continued*)

TABLE 5. Data Capture Table Descriptive Papers (*Continued*)

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
Fitzgerald et al. (2003)	Role Modelling Interventions for Family Boundary Ambiguity in are PICU Experimental and phenomenological design	Discusses two pediatric critical care nurse specialists participation in a collaborative research team led by university faculty	Clinical Nurse Specialists (*n* = 2)	Preparation, Execution, Translation CNS "CoPrincipal Investigator involved in all aspects of the study" Conceptualization, ethics approvals, presentation to funding committee, comanaged budget, ongoing liaison with nursing staff, study intervention, distributed questionnaires, abstract writing, manuscript preparation poster, and paper presentations	Challenges of implementing clinical research role Benefits of using a collaborative research model

(*Continued*)

TABLE 5. Data Capture Table Descriptive Papers (*Continued*)

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
Fredericks, Martorella, and Catallo (2015) Canada	Randomized Controlled Trial to evaluate a web-based patient education intervention	To describe the process of using an Integrated Knowledge Translation approach to design a research study (prospective)	Lead nurse (n = 1) other nurses (n = NR)	Preparation, Execution, Translation Lead nurse; Protocol design consulted to ensure that the question targeted the intended context and could be transferred to similar audiences across similar settingsdetermine appropriate research question and study methodology-ongoing feedback as the study is being designed and/or implemented Nurses; will interpret results, develop recommendations, help to identify audiences for dissemination, draft systematic review, submit of grant proposals, provide insight into the knowledge needs of other users Assist in refining the grant proposals and manuscripts to maximize the likelihood that the research results will be easily implemented into practice	Planning to obtain: Feedback from nurses regarding amount of time involved in the study, perception of factors that facilitated or interfered with participation, or affected the KT process, data related to reasons for knowledge user attrition, effectiveness of the knowledge user recruitment strategy and utility and feasibility of the knowledge user screening procedure

(*Continued*)

TABLE 5. Data Capture Table Descriptive Papers (*Continued*)

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
Gettrust, Hagle, Boaz, and Bull (2016) USA	Study to evaluate the feasibility of an educational intervention that prepared family carers to take action when delirium symptom observed in older adults	To describe the process of exploring and implementing an academic-clinical study engaging nursing staff in research	Orthopedic Clinic Nurses (n = NR)	Preparation, Execution, Translation Engaged with a Clinical Nurse Specialist in order to obtain buy in and sustain engagement with frontline nurses Clinical Nurse Specialist linked the academic and clinical partners; work with clinic nurses to review aims of study, map process for scheduling clinic appointments along with time frame for study, obtained "buy-in"from staff, sustained clinic staff engagement with study Clinic staff; identification of potential study participants, data collection, integrated study into their daily workload	Described process

(*Continued*)

TABLE 5. Data Capture Table Descriptive Papers (*Continued*)

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
Harrison and Graham (2012) Canada	Evidence-based practice and implementation for care improvement in wound care management	To describe practical experiences as researchers of working at point of care and how research can be used to facilitate the implementation of evidence	Nurses (*n* = NR) Physicians	Translation Issue clarification, question identification, analysis of available research, implementation (of evidence-based guidelines)	Lessons learned Reflection on clinical developments Brief report of a 1-year prepost evaluation to measure patient and system outcomes
Hummelvoll and Severinsson (2005) Norway	Action research Ethnographic study with use of cooperative inquiry design of the Project Teaching Ward	To reflect upon experiences of using co-operative inquiry in an action research project	Nurses (*n* = 22), Occupational Therapist (*n* = 1), Social Worker (*n* = 1), Doctors (*n* = 2) Charge nurse ward staff (*n* = NR)	Preparation, Execution, Translation Research planning and actions carried out in collaboration Actively participated in deciding on the themes for inquiry, preliminary reports presented to coresearchers to validate the findings and to establish their clinical relevance Experienced nurse appointed as coordinator to mediate between the staff, seminars and	Reflection on the project leader's researcher role Changes in practice ran parallel to the research

(*Continued*)

TABLE 5. Data Capture Table Descriptive Papers (*Continued*)

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
				weekly dialogical teaching sessions; report research progress and setbacks to the referee group from the staff's point of view; motivate staff participation	
Khresheh and Barclay (2007) Jordan	Action research to implement a shared clinical record within three hospitals	To describe the practice-research engagement that occurred during an action research project	Midwives Nurses (n = NR; and doctors)	Preparation, Execution, Translation Planning, design, study intervention, implementation (of a new clinical record)	Benefits and challenges
Poat, McElligott, and Fleming (2003) United Kingdom	Randomized Controlled Trial to investigate whether routine suturing of perineal lacerations is required	To report reflections by researcher on the effect of midwives' attitude on the research process	Midwives (n = NR)	Execution Clinical midwives acted as recruiters of the women, randomized consenting women who fitted inclusion criteria	Researchers observations on how attitudes of midwives as recruiters can negatively affect the research process

(*Continued*)

TABLE 5. Data Capture Table Descriptive Papers (*Continued*)

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
Reed and Hocking (2013) New Zealand	Action research to identify strategies senior occupational therapists adopt to disseminate new concepts that have the potential to revise and transform practice	To reporting the study Reflections by occupational therapists on their involvement	Occupational Therapists (n = 6)	Preparation, Execution, Translation Coresearchers	Practitioners descriptions and reflections on process and transformations in practice One practice story which illustrated the impact involvement had on practice
Renfrew et al. (2008) United Kingdom	Development of evidence-based recommendations to promote and support breast feeding	To test a structured process of developing evidence-based recommendationsin public health while involving a broad constituency of practitioners, service commissioners and service user representatives	Stage 1: Consultation on evidence-based recommendations for practice via electronic survey Midwives (n = 212; and nurses, health visitors, Sure Start workers, social services, dietician, General Practitioner) Service users Service commissioners Stage 2: Analytical consultation workshops	Translation Consultation to ensure that the final recommendations reflected a critical balance between the scientific confidence in the findings, and a realistic and practical appreciation of what would really work in practice Implementation (of evidence-based recommendations for practice)	Researcher perception of positive experience and outcomes Methodological challenges of involving stakeholders

(*Continued*)

TABLE 5. Data Capture Table Descriptive Papers (*Continued*)

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
			Midwives, Health visitors, Sure Start workers, and breastfeeding Counsellors, senior executive level inNHS Trusts, national policy leads (*N* = NR)		
Roll et al. (2013)	Multisite, randomized, behavioral clinical trial of a music therapy intervention for (AYA) undergoing stem cell transplant for an oncology condition (SMART)	To describe the efforts of the core research team to engage and include direct care nurses at each study site in the conduct of the study	Nurses (n=NR)	Execution (a) Informing study staff of patient clinical status; (b) organizing nursing care and symptom management to maximize ability of study participation to complete study activities; (c) supporting and encouraging patient participation; and (d) following quality assurance procedures to maintain evaluator blinding during the intervention	Researchers description of the challenges experienced and strategies put in place to address challenges

(*Continued*)

TABLE 5. Data Capture Table Descriptive Papers (*Continued*)

Author Country	Study in Which Engagement Took Place	Purpose of Paper	Practitioners Engaged in Study	Stage(s) of Research Process in Which Practitioners Engaged	Outcomes Described
Sadler et al. (2017) United Kingdom	To select an intervention to improve long-term care for stroke survivors with multimorbidity	Describes a stakeholder engagement study design informed by coproduction principles in which stakeholders prioritized ways in which data, or information could support improvements in long-term care for stroke survivors with multimorbidity	Occupational Therapist ($n = 1$) Physiotherapist ($n = 2$) Speech and Language Therapist Nurse ($n = 2$) (and GPs, policy makers, carers, service users)	Translation Implementation (identify and prioritize novel interventions that utilize clinical and research data)	Description of process Brief discussion of strengths and limitations

Note. AYA = adolescents/young adults; KT = Knowledge Translation; NR = Not reported; PICU = Peditaric Intensive Care Unit; SMART = Stories and Music for Adolescent/Young Adult Resilience during Transplant.

TABLE 6. Stages of the Research Process in Which Practitioners Were Engaged

	Evaluative Papers (n = 18)	Descriptive Papers (n = 14)	Total (n = 32)
Preparation			
Prioritization	1	–	1
Question identification	–	1	1
Protocol design	2	2	4
Execution			
Recruitment (screening, consent)	5	4	9
Data collection tool design	–	–	–
Intervention delivery	6	1	7
Data collection	3	3	6
Data analysis	–	1	1
Translation			
Dissemination	1	3	4
Implementation activity	5	3	8
Secondary data analysis	1	–	1

et al., 2009). When exploring perceptions of their role, two studies identified practitioners acting as gatekeepers by making decisions independent of the researcher based on their subjective judgements over participant's eligibility and the study intervention (Potter et al., 2009; Stuart et al., 2015). Poat et al. (2003) described their observation of the behaviors of midwives within one trial, reporting that it appeared that practitioners' beliefs about the intervention led them to attempt to influence the research outcomes. These examples therefore demonstrate inconsistent behaviors of practitioners within a study and opportunities for bias.

Authorship. Three papers explicitly acknowledged that practitioners had engaged in dissemination activities such as manuscript preparation and conference presentations (Campbell et al., 2015; Fitzgerald et al., 2003; Fredericks et al., 2015) but just one having practitioner presence in their authorship (Fitzgerald et al., 2003). Fujimoto et al. (2015) specifically set out to establish collaborative efforts between academics and practice and used practitioner authorship as the measure. Their findings showed limited collaboration in this regard. Capture of named author affiliations of the papers retained for analysis in this review showed that, in the main, authorship was by academic based authors only (n = 19). Although practice affiliations of authors were present (n = 13), authorship details rarely provided information on the work role of the author or their role within the study. Pollock et al. (2015) listed author contributions identifying that a practice-based author had contributed to the design, coordination, and analysis of the study in addition to assisting with drafting the published paper.

IS THERE ACKNOWLEDGEMENT OF THE OUTCOMES, IMPACTS, OR BENEFITS OF ANY REPORTED ENGAGEMENT AND HOW ARE THESE EVALUATED?

The purpose of each paper was extracted which showed that across evaluative and descriptive papers, authors generally set out to explore the experiences of practitioners or describe the process of engagement that occurred (Tables 4 and 5). Evaluative papers most frequently aimed to evaluate practitioners' experiences (n = 7) or identify challenges and enablers of engagement (n = 4). There was limited evidence of papers whose purpose was to specifically report on the impact of practitioner engagement on research use, although some examples were found. These related to the engagement of practitioners in the production of implementation products; one specifically posed the question "does involving clinicians in generating and evaluating a clinical standard lead to changes in practice or improve patient outcomes?" (Dufault & Sullivan, 2000) while Kothari et al. (2005) aimed to determine if interaction between researchers and practitioners promoted the use of research findings. Both adopted a comparative approach to specifically evaluate the impact of practitioner engagement in implementation activities on research use. Kothari et al. (2005) qualitatively compared the reading, processing and application behaviors of practitioners who had interacted with a research team during the development of a report on breast cancer prevention with those of practitioners who had simply received the report. Subjectively, interaction with the research team appeared to influence understanding, value and intention to make use of the report however, there appeared to be no difference between the application of research findings between the two practitioner groups. Dufault and Sullivan (2000) found that patients who received care from a practitioner who followed a research-based pain management standard which they had been directly involved in producing experienced improved health outcomes when compared to a control group who had not received treatment via the collaboratively produced standards. Conclusions were drawn from data obtained objectively by comparing patient outcomes of pain, quality of life, and satisfaction measures. Papers whose purpose related specifically to the impact on practice when practitioners were engaged in preparatory or execution phases of the research process were sparse. Occupational therapists were asked to reflect on the influence engagement in stages of a RCT had on their practice (Finlayson et al., 2005) while Ishimaru et al. (2016) evaluated effects of participation in multiple collaborative projects by asking nurses to report their perceptions of practice improvements.

To obtain further data, the main types of outcomes reported within evaluative papers and the methods used to identify these outcomes were extracted (Table 4). Thirteen of the eighteen adopted a qualitative approach to explore engagement experiences using focus groups, interviews, and reflective accounts. Likert scale surveys were used in three studies to evaluate experiences with two exploring practitioners' experiences further through open comments (Pollock et al., 2015) and interviews (Ishimaru et al., 2016). Specific strategies to facilitate engagement were also evaluated in two papers; an online approach to prioritizing patient-centred research topics (Khodyakov et al., 2017) and the use of Participatory Learning and Action (PLA) techniques for data generation and coanalysis (O'Reilly-de Brún et al., 2018). Fujimoto et al. (2015) explored levels of engagement by attempting to identify collaboration levels through citation data while Dyson and Dyson (2014) classified practitioners' roles to determine their level of engagement.

Establishing and theming outcomes in descriptive papers proved challenging as these tended to be narrative in nature, reporting researchers' general reflections, perspectives or thoughts on the process, however it was clear that the focus of these papers was on the benefits, challenges, and lessons learned from engagement experiences, most often taken from the author's perspective. As authors predominately had academic affiliations, these descriptions appear to have the voice of the researcher (Table 5). Although one paper provided an example of active practitioner input to protocol design which illustrated that changes were made (Fredericks et al., 2015), no papers formally evaluated specific changes made to the design or conduct of a study following engagement of practitioners in the research process. Some authors acknowledged the role clinical input had on overcoming research challenges and a potentially positive influence on the validity of the study. Examples included seeking clinical views on validity and usefulness of proposed data collection procedures (Bullen et al., 2014; Pollock et al., 2015) and input that could optimize study participation in the clinical context (Campbell et al., 2015; Gettrust et al., 2016; Roll et al., 2013). In addition, no formal evaluation of the impact of engagement on practitioners' research skills was noted.

What Frameworks, Models, or Theories are Used to Guide Reported Engagement?

Content analysis showed that 12 papers reported use of theoretical engagement principles (Table 7) with a variety of theories employed to guide practice and more than one theory referred to in some instances (Harrison & Graham, 2012; Hummelvoll & Severinsson, 2005). Theories used included IKT, coproduction principles, and participatory methodologies. The term "collaborative research" was used in different ways; within a particular collaborative model (Dufault & Sullivan, 2000), to refer to a collaborative research team (Fitzgerald et al., 2003) in relation to an action research approach (Reed & Hocking, 2013) and with no definition (Stockwell-Smith et al., 2015). Some authors explicitly presented models which had guided practices such as the Collaborative Research Utilization (CRU) approach (Dufault & Sullivan, 2000), Framework of Interaction and Research Utilization (Kothari et al., 2005), and Practice-Research Engagement (PRE; Khresheh & Barclay, 2007). In general, however, researchers who engaged practitioners did not appear to adopt a theoretical engagement approach other than emphasizing the role practitioners played in the research process.

TABLE 7. Theoretical Positions Used to Guide Engagement of Practitioners by Academic Researchers

Evaluative Papers (*n* = 4)	Theoretical position
Andrew, Johnston, and Papadopoulou (2013)	IKT
Dufault and Sullivan (2000)	CRU approach
Kothari et al. (2005)	Framework of interaction and research utilization
O’Reilly-de Brún et al. (2018)	Participatory and action learning research
Descriptive Papers (*n* = 8)	
Fitzgerald et al. (2003)	Collaborative Research
Reed and Hocking (2013)	Collaborative Action research
Harrison and Graham (2012)	IKT(Strategic alliance with practice community, Research-practice partnership, participatory research, collaborative research practice approach)
Fredericks et al. (2015)	IKT
Khresheh and Barclay (2007)	PRE
Hummelvoll and Severinsson (2005)	Participatory research Cooperative inquiry
Burford et al. (2015)	Participatory research based on democratic dialogue theory
Sadler et al. (2017)	Coproduction principles

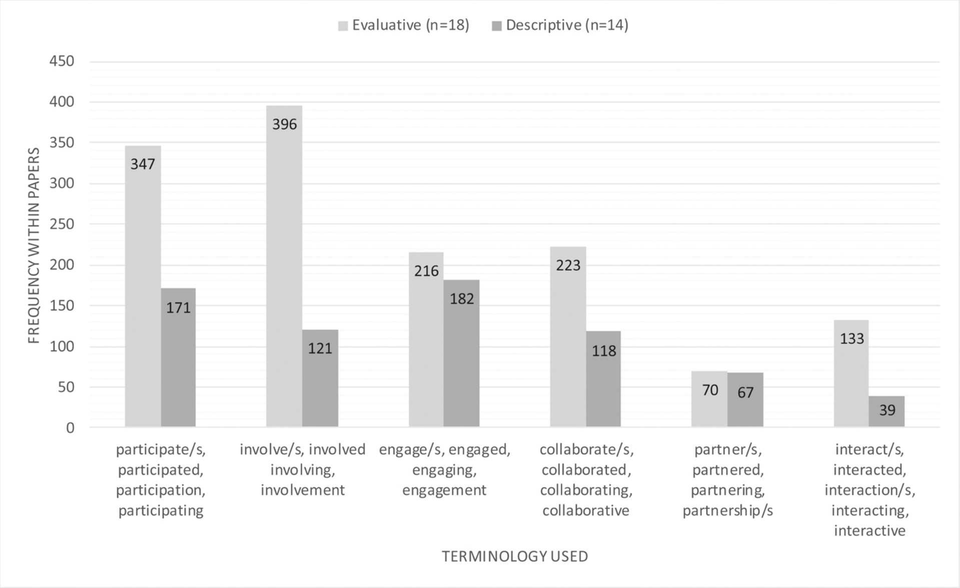

Figure 2. Frequency of terminology used within papers included in the review.

A frequency count of full texts identified that in descriptive papers, the most common term used was a derivative of "engagement" while in evaluative papers derivatives of "involvement" were more widely adopted (Figure 2). Thirty of the analysed papers (94%) used the four terms participate, involve, collaborate, and engagement (or derivatives of) interchangeably throughout the text. Inclusive words such as coproduce, cocreate, and "members of the research team" were used as were reductionist terms such as hired hand and recruiter. Operational definitions of these terms were not provided.

DISCUSSION

This scoping review includes 32 papers which report on university based academic researchers engagement of frontline practitioners, from nursing, midwifery, and therapy professions in the research process, in a role other than as a study participant. The review has achieved its aim by sourcing and reporting on the literature base relating to this topic, demonstrating a heterogeneous evidence base for this activity across these healthcare disciplines. The included papers evidence that academic researchers are engaging with practitioners in their research endeavors and that efforts are made to evaluate and reflect on this process. There is a clear split between evaluative reporting and description of experiences with considerable variation across all papers in the type of engagement, what is evaluated and the focus of reporting making identification of distinguishing patterns or trends challenging. Considering the global nature of the search, the number of articles which met the review criteria was low; this yield is not necessarily reflective of engagement practices but instead indicates that reporting of this activity in peer reviewed publications is limited. Reporting does, however, appear to be on the increase with a clear rise in publications during the latter 2 years perhaps suggesting an emerging topic and possible increase in engagement practices.

As first thought, differences can be noted when publication activity is compared to that of other healthcare research stakeholder groups; the literature base relating to engagement with patients and the public in health research contains a substantially higher number of papers, evidenced in systematic reviews (Brett et al., 2014; Domecq et al., 2014; Shippee et al., 2015). This is perhaps reflective of policy initiatives and research funding body mandates to engage with this stakeholder subgroup whereas the drive to ensure an engagement culture specific to practitioners as a discrete stakeholder group appears less apparent. Although the diversity across the literature base, coupled with a relatively low yield, makes analysis and synthesis of papers challenging, the data extracted from reviewed papers enables gaps to be identified and considerations for practice and future research to be explored.

Engagement in the Stages of the Research Process

Engagement was most frequently reported to occur in just one element of the research process with practitioners often engaged to carry out a specific role in the execution phase of a study, such as delivery of the study intervention or recruitment of participants. This contradicts the strong assertion of theories such as IKT that practitioners should be involved across the research process. Collaboration during research formulation and study design to identify the knowledge needs of health professionals is deemed an important requirement to produce clinically relevant, useful, and practicable new knowledge (Andrew et al., 2013; Bowen & Graham, 2013; Green, 2008; Krebbekx, Harting, & Stronks, 2012) and ensure commitment to the study (Brown, Bammer, Batliwala, & Kunreuther, 2003). However, little evidence of engagement in the preparatory phase in the form of conceptualization or protocol design was present in the literature scoped. Engaging practitioners in subsequent execution activities when they have not contributed to the protocol design limits their opportunity to voice their research needs or apply their experiential knowledge to study planning. Subsequently, lack of study ownership could create reluctance to engage in subsequent stages of the research process. That levels and type of engagement can impinge on the outcome and success of practitioner engagement is addressed in a small number of papers within this review and has been noted in wider healthcare research (Rooshenas et al., 2016; Ziebland et al, 2007). The "hired hand" effect and subsequent resistance to a study can result in practitioners' attitudes influencing important elements such as participant recruitment (Dyson & Dyson, 2014). Examples illustrate how practitioner buy-in can be affected by concerns around elements of a study, such as eligibility criteria and the study intervention, influencing behaviors in their role within the research and potentially impacting internal and/or external validity (Dyson & Dyson, 2014; Poat et al., 2003; Stuart et al., 2015). Such reductionist roles limit scope to draw on practitioners' experiential knowledge, restricting the meaningful contribution made, and the ability for this type of engagement to increase the likelihood of the knowledge produced being used in practice. This reinforces the call for further research to identify which forms of engagement are productive and what their impact can be (Bowen & Graham, 2013).

In the translational phase of the research process, it is encouraging to see practice affiliations within authorship listings and engagement of practice-based personnel in dissemination activity. However, affiliations can reveal little about the work role of practice-based authors or the full nature of the engagement beyond manuscript preparation. This is compounded by many papers reporting engagement activities yet no reference to practice-based authors reinforcing the academic nature of publication and dissemination activities. Engagement during implementation activities was prevalent in this review; researchers recognize the value of working with practitioners at the point of care (Harrison & Graham, 2012) and the positive impact this may have in the translation of research into practice. Encouraging effects were noted for patient outcomes and the use of research findings when practitioners were engaged in the production of implementation products. However, the case for practitioner engagement asserts their role in the preparation and execution phases of the production of research derived knowledge to realize the benefits for research use as opposed to directing engagement to only the translation phase.

Evaluation of Engagement

Papers focussed on a range of outcomes, most often the benefits and challenges of the engagement process. Lessons which can be learned from these experiences and the benefits realized by practitioners for their professional and practice development are arguably valuable. However, despite claims that practitioner engagement is imperative to produce research which is more readily transferable into practice, evaluations which measure these specific impacts on evidence-based practice are sparse. Empirical evidence to support the notion that engagement of practitioners by academic researchers bridges the gap between research and practice is lacking which prohibits demonstration of the value that can be added. Qualitative methods dominate the evaluative literature base, with most researchers exploring the practitioner experience, potentially biased by the collection of this data by the researchers themselves. Coupled with a tendency for researchers to offer reflective narrative on their experiences through descriptive publications, the result is a subjective evidence base built on a variable range of personal perspectives. The challenges of measuring impact of engagement on practice outcomes empirically are of course recognized and have been experienced with other stakeholder groups (Esmail, Moore, & Rein, 2015; Edelman & Barron, 2016). When considered in tandem with the issue of the optimal level of engagement and stages of the research process in which practitioners should be engaged, what is clearly missing from this literature base is the evidence which links specific engagement activities with specific intended outcomes. Hence the true impact of the varying types and levels of engagement on evidence-based practice is unclear.

Terminology and Theoretical Approaches

There has been a surge of interest in recent years in approaches which stress the value of engaging practitioners across the research process. Certainly, papers considered in this review spoke of the desire to cocreate, codesign, and coproduce research with the practitioners in question. However, many did not evidence use of a theoretical approach and in addition tended toward engagement in just one aspect of the research process as opposed to spanning a study as these coproductive approaches postulate. The case is now made for engagement principles to be explicit in all research designs (McCormack, 2011; Pentland et al., 2011). Researchers therefore must look to existing engagement paradigms to ensure meaningful engagement which will result in research use (Bowen & Graham, 2013). However, it appears more work may be required to guide researchers in this regard. It is inevitable that engagement levels will vary in healthcare research dependent on the nature of the study and that barriers may limit the feasibility of a full participatory approach (Bowen & Graham, 2013). A better understanding of how meaningful engagement can be achieved when the intended goal is production of relevant and practicable knowledge to affect evidence-based practice is therefore required so strategies can be employed, and action taken to embed such practices in to the research design. Developing this understanding may need to begin by establishing consistency around the language used to describe this activity. The review confirmed that "engagement" is used regularly but with near equal frequency and interchangeably with other synonyms such as "involvement," "participation," and "collaboration," which are open to interpretation. As most authors do not offer an operational definition of what constitutes engagement, or their chosen term, there is both ambiguity and inconsistency as to what the terminology used signifies. Coupled with the theoretical labels and the use of terms such as exchange (Baumbusch et al., 2008) and interaction (Bowen & Graham, 2013; Nutley et al., 2014) to represent this activity, such variation is potentiality a limiting factor in building an evidence base to establish the essence of what practitioner engagement truly means or what is required to achieve its intended goals. This concept aligns closely with the culture of public engagement in research (Bowen & Graham, 2013); in the United Kingdom, consistent use of the term "Patient and Public Involvement" (PPI) has led to a common language, clear definitions, and operational guidance which have moved the agenda forward and enabled evidence to be generated in relation to this stakeholder subgroup. Established definitions within "PPI" show fundamental differences in terms, for example, "involvement" represents a more active role in the research process than "engagement" (NIHR, 2012). A similar consistency of terminology and corresponding taxonomy now needs to evolve around practitioner engagement (Dimova et al., 2018).

CHALLENGES AND LIMITATIONS OF THE REVIEW

Challenges were encountered by the author in the process of sourcing publications to include in this review. A range of synonyms exist for the process of engagement, recognized as a challenge by authors who have previously analysed literature in the stakeholder engagement field (Camden et al., 2015; Concannon et al., 2014). Although a comprehensive search strategy and iterative approach optimized the yield, overlooking publications is a possibility and a frequently reported limitation of scoping reviews (Pham et al., 2014). Best efforts were made to ensure papers met the review criteria and authors contacted when there was doubt; it was often difficult to apply inclusion and exclusion criteria to establish if engagement was academically initiated, based in a formal organizational partnership arrangement or to discern internal or external research teams as such data was not always reported by authors. It is acknowledged that research with academics is often initiated from practice, and so further work to consider the extent of publications in this regard may also be informative. A scoping review is not intended to be exhaustive (Levac et al., 2010); rather to enable a breadth of publication types to be represented. Indeed, as the review has shown, much of the literature dedicated to this topic is narrative and reflective in nature and therefore may lend itself well to discussions within grey literature, conference presentations, and social media. However, such resources were not captured in this review potentially overlooking further examples and experiences of engagement practices. Although the disciplines of nursing, midwifery, and occupational therapy have been given fair representation by the papers found, physiotherapy and speech therapy appear underrepresented in the literature reviewed. Evaluation of the quality of the literature was not within the remit of a scoping review (Levac et al., 2010), therefore, further appraisal of the methods used to evaluate engagement and synthesis of findings is required.

CONCLUSION AND RECOMMENDATIONS FOR RESEARCH AND PRACTICE

The aim of this scoping review was to map literature in the nursing, midwifery, and therapy fields (physiotherapy, occupational therapy, and speech and language therapy) which reports on engagement of frontline practitioners in the research process by university based academic researchers. While the low yield and heterogeneity of identified papers has made identification of patterns or themes challenging, gaps in the literature can be established and consideration given to future practice and research needs. This review has shown: (a) limited reporting of nursing, midwifery and therapy practitioner engagement in the research process, (b) engagement is largely focused on one aspect of the research process in any given study, (c) limited objective evaluation of the influence of engagement levels and types on the research-practice gap, (d) limited use of theory to guide engagement practices to achieve outcomes which will positively impact the research-practice gap, and (e) use of inconsistent and undefined terms to describe this activity.

Engagement of practitioners in the research process by academic researchers is occurring in healthcare research, albeit, from what the literature suggests, inconsistently and with little empirical evidence of its added value. Although advocated, the need for practitioner engagement to be embedded into the research process to enhance relevance and utility, still appears open for debate and what constitutes productive and meaningful engagement which can affect the use of research derived evidence in practice is unclear. This largely stems from the lack of empirical evidence to support the belief that such practices can positively influence the research practice gap. Evaluations should therefore develop a greater focus on establishing what is meant by meaningful engagement and measuring intended impacts, that is, the influence of engagement on research utilization and ultimately health outcomes. Factors contributing to the limited and inconsistent literature base must be addressed if knowledge in relation to this activity is to be advanced and the culture of engagement of practitioners in research is to be further developed. The challenges of developing an evidence base to support effectiveness of engagement activities is clear from the experiences of the Public and Patient Involvement (Patient and Public Involvement) agenda which, despite a growing body of literature and infrastructures, continues to require further development and evaluation. However, what the PPI agenda does possess is a common language to move the agenda forward and enable evidence to be generated and which is supported by many research funders who make it a requirement for PPI to be evidenced in applications. This review very specifically focused on contexts where dedicated collaborative, cross organizational programmes are not in place. However, it is recognized that globally there are several national initiatives funded specifically to create academic-practice partnerships and so facilitate engagement between academic and practice communities. A further body of literature which both describes and evaluates this parallel context is evolving from these initiatives and so future work should explore if lessons can be learned from these experiences to inform practices for those not situated in such partnership arrangements. Fundamentally, further insight is required into what type of engagement works and how to enable researchers to ensure engagement is embedded into academic research to positively influence use of the knowledge produced in clinical practice.

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Qualitative study of surgeons' experiences of participation in a pragmatic multi-centre RCT. *Trials*, *8*(1), 4. https://doi.org/10.1186/1745-6215-8-4

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2.4 Overview of scoping review findings

By extracting data from the papers included within the review, the extent of practitioner engagement could be deduced by establishing the research activities in which practitioners had engaged. Across the 32 papers included within the review, eight reported on engagement in the translation stage only, that is, activities post data analysis, predominately the dissemination and implementation of findings (Shippee *et al.* 2015). These examples sit within the realms of the knowledge transfer paradigm, and therefore do not align with the principles of the engagement paradigm (Table 2.2) as there was no evidence to suggest that the practitioners had been included in the knowledge production process. Similarly, Khodyakov *et al.* (2017), evaluated a specific strategy that would engage professional stakeholders in the prioritisation process only. The remaining 23 papers were categorised based on the types of engagement which were observed (Table 2.3). As this table shows, in ten of the papers the type of engagement observed aligned with the engagement paradigm, three did not, and ten were reasoned to partially align. In the next sections, further consideration is given to each of these observed engagement types and the corresponding examples.

Table 2.3 Categorisation of types of engagement observed in scoping review examples assessed against principles of the engagement paradigm (Bowen and Graham 2013)

Align with engagement paradigm (n= 10)	**Do not align with engagement paradigm (n=3)**	**Partial alignment with engagement paradigm (n=10)**
	Hired hand research	*Observed phenomenon*
Action Research Reed and Hocking (2013) Khresheh and Barclay (2007) Hummelvoll and Severinsson (2005) **IKT** Fredericks *et al.* (2015) Harrison and Graham (2012) Andrew *et al.* (2013) **Participatory research and democratic dialogue** Burford *et al.* (2015) **Collaborative research** Gettrust *et al.* (2016) Fitzgerald *et al*. (2003) Ishimaru *et al.* (2016)	Dyson and Dyson (2014) Stuart *et al.* (2015) Poat *et al.* (2003)	Boase *et al.* (2012) Bullen *et al.* (2014) Di Bona *et al.* (2017) Eriksson *et al.* 2013 Finlayson *et al.* (2005) Potter *et al.* (2009) Stockwell-Smith *et al.* (2015) Albers and Sedler (2004) Campbell *et al.* (2015) Roll *et al.* (2013)

2.5 Instances observed in the scoping review which align with the engagement paradigm

As shown in Tables 4 and 5 within the scoping review (*paper 1*), and as summarised above in Table 2.3, ten examples were assessed as aligning with the principles of the engagement paradigm; seven reported engagement of practitioners throughout the research process (preparation, execution, translation), and an eighth reported on the development of a research protocol, in which intent to involve the clinical nurse specialist in all subsequent stages of the research process was clear (Fredericks *et al.* 2015). In a further example, the authors reported engagement in the design and execution stages of the study without specific consideration of translation activities (Burford *et al.* 2015). However, it could be reasoned from the paper's content that this was due to the study status at the time of reporting. In one paper, the type of engagement was difficult to discern as collaboration within a number of projects was evaluated and the specific activities in which nurses had engaged not reported (Ishimaru *et al.* 2016). However, a section of this paper was dedicated to some of the nurses' perceptions of the benefits of engaging in the full research process; therefore, this example was categorised as aligning with the engagement paradigm.

Analysis of the engagement reported in these ten papers suggests alignment with the principles of the engagement paradigm in that practitioners had an active role in all or most of the research process and evidence of the utility of the findings was evident. Although principles of the paradigm such as power sharing in decision making and equality were perhaps not explicitly reported, the intent was clear through the choice of methodologies and the use of additional theories to promote participatory practices. Three of these papers adopted an action research design (Reed and Hocking 2013; Khresheh and Barclay 2007; Hummelvoll and Severinsson 2005). In two cases, this was combined with additional theoretical elements to support the engagement process. Hummelvoll and Steverinsson (2005) used co-operative inquiry, described as a methodology in which all those involved work together as co-researchers (Reason and Heron 1986). Collaborative reflection and action phases and associated activities demonstrate the co-operative nature of Hummelvoll and Steverinsson's (2005) study, which included all elements of study planning and conduct and resulted in changes to practice which ran parallel to the research. Khresheh and Barclay (2007) also described how they used action research cycles which were underpinned by the principles of Practice Research Engagement (PRE) (Brown *et al.* 2001). Although used by Khresheh and Barclay (2007) to guide an action research project, the authors of PRE were clear that its use extends beyond action research by providing a broad conceptual umbrella to guide varying levels of practice research engagement (Brown *et al.* 2003). Within PRE, practitioners are defined as any social actors who are service providers (Brown *et al.* 2003) and so has not been developed specifically for use in health research, but in a broad range of contexts.

Finally, Reed and Hocking (2013) adopted an action research approach to their study, a process which they described as ‘doing with others’. They highlighted the integral and active role of the occupational therapists with whom they engaged and who were referred to as co-researchers throughout. The very nature of action research is a cycle of reflection, action and evaluation, evidenced in this example as therapists planned and implemented changes to their clinical practice and the practice of colleagues during this study (Reed and Hocking 2013). Harrison and Graham (2012) alluded to the use of action research, although little detail relating specifically to the methodology was provided and reference was more often made to a planned action approach. They also briefly highlighted their use of Integrated Knowledge Translation (IKT), the approach which the engagement paradigm explicitly underpins, to reinforce the need for enquiries to be about the local context and population for uptake to be effective. Little consideration was given to the specifics of how and why IKT was used, although the content of the paper makes it clear that knowledge users were engaged in the issue identification, solution building and implementation across their programme of work. They described their work variously as participatory research, a research-practice partnership and engaged scholarship, all of which they report will enable evidence to be produced at the point of care in response to local concerns. Positive impacts to clinical practice are reported as a consequence, including increased efficiencies within the service, improved wound healing rates and reduced treatment costs.

Two further papers also detailed their use of IKT to guide engagement practices. Fredericks *et al.* (2015) described IKT as an important tool that assisted with their evaluation of a nursing intervention and in which a nurse was an equal partner in the research team. Their paper described development of the study protocol, which included identifying knowledge needs of users and ensuring meaningful participation of knowledge users was planned throughout the research process. This example reports on the protocol development and their intentions, so although outcomes are as yet unknown, positive impacts on clinical outcomes were anticipated (Fredericks *et al.* 2015). Similarly, Andrew *et al.*'s (2013) paper specifically reported on the implementation phase of a study, however, it was clear from the reporting and specific detailing of the steps of IKT that were followed, that nurses had been engaged in and integral to the full research process.

Burford *et al.*'s (2015) use of a participatory research approach and democratic dialogue theory, alongside the emphasis placed on active co-design of the research with practitioners, pointed clearly to the presence of engagement paradigm principles. The final two examples, however, did not specify the use of theories or participatory methodologies. In one, the reporting predominately described what was referred to as both a collaborative process and a partnership (Gettrust *et al.* 2016). Although the paper's focus is a description of the clinical nurse specialist's role in the study and subsequent engagement of nursing colleagues in the process, it provides a further example of engagement by academic researchers of clinical staff across the research process. Although the authors acknowledged that at the time of reporting it was too early to implement the developed intervention, they were clear that the study had added value and contributed to the body of evidence in the clinical field (Gettrust *et al.* 2016). In the final example, in a collaborative research project carried out by a collaborative research team, a clinical nurse specialist (CNS) adopted the role of co-investigator and contributed to all research activities, including conceptualisation (Fitzgerald *et al.* 2003). Again, the focus of the paper was descriptive, reporting mainly on the challenges the CNS faced in taking on this role, but also detailed the clinical skills developed and being able to translate the findings of the study into practice.

2.6 Instances observed in the scoping review that do not align with the engagement paradigm

Thirteen papers included in the scoping review illustrated how practitioners had been engaged in the execution phase of the research process only, that is, activities which involved execution of the study protocol (Shippee *et al.* 2015). In the main, these activities included participant recruitment, data collection and/or delivery of a study intervention, with few appearing to be engaged in the study design or conceptualisation. It was reasoned that these studies could not be classified as examples which aligned with the engagement paradigm as they fell short of its ideal of engagement in all or most of a study's activities (Bowen and Graham 2013). Critical consideration of these examples however, suggested that they too could be delineated into two further categories in light of the role the practitioner appeared to adopt in the knowledge production process. Based on the type of engagement observed and the outcomes reported, some examples did not align with the engagement paradigm and some were reasoned to partly align (Table 2.3). In the following two sections these categories are considered, and specific examples used to illustrate how two divergent types of engagement were observed. The first aligns with an already proposed phenomenon known as hired hand research (Roth 1966). The second, although reasoned to have partial alignment with the engagement paradigm, does not appear congruent with any previous categorisation of the engagement type observed.

2.6.1 Hired hand research

Within the review, a type of engagement was observed which shows that practitioners were engaged to help the researcher to achieve a particular goal, referred to in one paper as ‘hired hand research’ (Dyson and Dyson 2014). A hired hand approach was first proposed in the context of sociology of work to categorise a form of labour when workers deviate from instructions and which results in restricted production (Roth 1966). Roth used this phenomenon to categorise a form of engagement by academic researchers, and so coined the term ‘hired hand research’. Roth’s example scenarios illustrate how hired hand research is experienced by those tasked to carry out an activity within someone else’s research plan. The researcher assumes that the ‘hired hand’ will be dedicated to the study and so carry out the assigned task to the best of their ability to optimise study success. Although case examples provided by Roth are extreme, they clearly illustrate how factors such as time restrictions, allocation of activities which do not make sense to the ‘hired hand’, receiving no credit for the final product and ignored suggestions, can result in those who are ‘hired’ to cut corners and demonstrate inconsistent practices which then result in negative influences on the quality of the study and its outcomes. This categorisation is not designed to assume or label such behaviours as unethical or unprofessional, but to reinforce both the behaviours that can result when this type of engagement is employed and the impact of such behaviours on the research (Roth 1966).

Within the scoping review, although the term hired hand research was only specifically used by Dyson and Dyson (2014), the characteristics of this engagement type were evident in a further two examples (Stuart *et al.* 2015; Poat *et al.* 2003) and potential for engagement within one study to become hired hand research evident in a fourth (Potter *et al.* 2009).

Table 2.4 Examples of hired hand research found in scoping review

Example from scoping review	Discipline of engaged practitioners	Research activities
Dyson and Dyson (2014)	Midwives (n=62)	Collecting and entering data
Stuart *et al.* (2015)	Midwives (n= 304)	Identification and recruitment of participants
Poat *et al.* (2003)	Midwives (n=NR)	Participant recruitment, consenting women who fitted inclusion criteria
Potter *et al.* (2009)	Nurses (n=10)	Participant recruitment

*NR = Not reported

Across these papers, the potential for practitioners’ attitudes and behaviours to have a negative effect on the research process was highlighted. Beliefs and values of recruiting midwives in relation to both the study and evidence-based practice generally, were surmised to result in paternalistic attitudes, asserting power over potential participants by withholding information (Poat *et al.* 2003). Subsequent data obtained from interviewing those who had turned down invitations to take part were inconsistent with the reasons for trial refusal documented by the recruiting midwives (Poat *et al.* 2003). In their evaluation of 62 midwives who had recruited mothers to a study, Dyson and Dyson (2014) characterised three-quarters of the midwives' recruitment styles as either 'refractors', whose outlook meant they took a minimal role, or 'resisters' who opposed the study and so recruited no participants or collected no data. Behaviours observed included forgetting to take study questionnaires to booking appointments, recruiting to a minimal level to appease the researcher or no recruitment activity by some midwives. Further objective data, such as the observed speed of the shorter time taken to administer questionnaires, called into question the validity of the data these practitioners collected. The authors reinforced that this was not considered unprofessional behaviour, moreover, the midwives' reactions demonstrated how they perceived they were being treated by the researchers, combined with the effects of the clinical pressures they faced (Dyson and Dyson 2014).

Similarly, when Stuart *et al.* (2015) explored the opinions of midwives whose role was solely to identify participants to take part in a Randomised Controlled Trial (RCT), they found that midwives were unclear about their role and experienced practical challenges in meeting recruitment expectations. In addition, midwives had concerns about the fit of the study eligibility criteria within their clinical area and the subsequent care that would be provided to those recruited (Stuart *et al.* 2015) and so, as a result, many did not mention the trial to potential participants. Worth noting are within two of these studies differences were observed across the behaviours of the practitioners (Dyson and Dyson 2014; Potter 2009), specifically noted was that nurses who could see benefit for their patients demonstrated higher recruitment activity when compared to nurses who felt that they had been put upon (Potter 2009).

These examples provide evidence of researchers calling upon frontline practitioners to recruit patients to a study whilst carrying out their routine care. Practitioners are often tasked with assessing patients against the study inclusion criteria, discussing the detail of the study with the patient and obtaining their consent (Preston *et al.* 2016). In doing so, the promise made to patients in the NHS constitution that they will be offered opportunities to take part in research can be efficiently enacted (Department of Health 2015). Some conclude that activities such as participant identification is not feasible within the already burdensome workload of frontline practitioners (Stuart *et al.* 2015) and so those in dedicated research roles are often employed to carry out such tasks (Tinkler *et al.* 2018). However, this is not always the case, and examples show that research nurses themselves can often be reliant on the specialist knowledge of front facing practitioners to support the recruitment process (Fenlon *et al.* 2013; Nelson *et al.* 2007).

It can therefore be concluded that although this type of engagement involves practitioners in research activities which contribute to the knowledge production process, there is limited evidence to suggest that it can positively influence the relevance and usability of healthcare research. Moreover, it reinforces that there are a number of potential threats created by this engagement type which could result in negative influences on a study and its outcomes. Unless action is taken to mitigate the negative effects of hired hand engagement, in studies in which this type of engagement is employed by academic researchers, the trustworthiness of evidence produced by these studies should be called in to question (Dyson and Dyson 2014). This sentiment echoes Roth's assertion that evaluative consideration of hired hand roles in research activities should form part of the critical appraisal of how knowledge has been produced (Roth 1966) and the need for clear transparency when reporting on what has taken place within a study (Pickler and Kearney 2018).

2.6.2 An unidentified type of engagement (the observed phenomenon)

A further body of literature in which practitioners were involved in the execution phase, was reasoned to only partly align with the engagement paradigm. Like hired hand research, practitioners were engaged in a small number of research activities, usually recruitment, data collection and intervention delivery and so not aligned with the principles of the engagement paradigm as engagement had not taken place in all or most of the research activities. However, outcomes observed in instances of this type of engagement did not concur with those associated with a hired hand approach as a range of positive effects on the study, clinical practice and/or the practitioner’s development were noted, which suggested potential for some influences on the relevance and/or utility of the study findings. Table 2.5 provides detail on these examples and the outcomes observed.

Table 2.5 Instances of the observed phenomenon found in literature (n=10)

Instance from scoping review	Stages of research process in which practitioners engaged	Outcomes observed which contributed to the study, practice or professional development
	Evaluative papers	
Boase *et al.* (2012) Nurses (n=14)	Delivery of study intervention	Positive changes to practice
Bullen *et al.* (2014) Multidisciplinary palliative care community team (n=NR) (includes nurses)	Study design Recruitment Development of data collection tool Delivery of study intervention	Changes to a questionnaire to be more reflective of clinical context Ethical processes informed by clinical knowledge
Di Bona *et al.* (2017) Occupational Therapists (n=28)	Participant recruitment Delivery of study intervention Data collection	Practiced skills not normally able to use in day to day clinical practice Experience of the research process Increased research understanding Making a contribution to the profession Opportunity to deliver an intervention which was valued
Eriksson *et al.* (2013) Occupational Therapists (n=6)	Delivery of study intervention	Improved knowledge Confirmation of what was already known and practiced Shared learning with colleagues Changes in ways of working Hope for future research activity
Finlayson *et al.* (2005) Occupational Therapists (n=8)	Screening of study participants Delivery of study intervention	Learning about research Learning about practice Learning about self
Potter *et al*. (2009) Nurses (n=10)	Participant recruitment	Positive experience of research involvement Benefits for patients observed
Stockwell-Smith *et al.* (2015) Registered nurses (n=3) and Personal Care Workers (n=20)	Delivery of study intervention	Required to rethink elements of current practice Increased confidence in interactions with clients Belief in the value of the new intervention

Table 2.5 (continued)

Instance from scoping review	Stages of research process in which practitioners engaged	Outcomes observed which contributed to the study, practice or professional development
Descriptive papers		
Albers and Sedler (2004) Midwives (n=12)	Data collection Data analysis	Made contribution to midwifery research
Campbell *et al.* (2015) Rehabilitation professionals (n=NR)	Clinicians: • sought out researchers for scheduling concerns • alerted researchers to changes in patients' condition that might impact research assessments • offered perspectives regarding variables of interest and operational considerations of conducting studies	Clinicians authors on manuscripts Researchers mentored clinical staff seeking research grants, provided continuing education programs, presented at unit journal clubs Researchers refined research procedures to accommodate the clinical team's concerns
Roll *et al.* (2013) Nurses (n=NR)	Clinicians: • informed study staff of patient clinical status • organised nursing care and symptom management to maximise ability of study participants to complete study activities • followed quality assurance procedures to maintain evaluator blinding during the intervention	Clinicians became more familiar with the conduct of research, observed the benefits of patient and family participation Opportunities for career advancement through participation in professional presentations and publications Made a significant contribution to advancing science to improve patient care

NR = Not Reported

As stated previously, this PhD study is concerned with the intersection of two concepts, that is, the engagement of frontline practitioners in the research process by academic researchers and the relevance of research to clinical practice. The study's initial theoretical framework depicted how these two concepts intersect by detailing the principles of engagement which should be present in order for the relevance of a study to be positively affected (engagement paradigm). Examples from papers included in the scoping review, and analysis of the type of engagement observed against this theoretical framework, therefore identified conceptual distinctions by observing examples which fit with the engagement paradigm and those which diverge from its key principles. By using abductive reasoning, novel theoretical insights were generated which reframed the scoping review findings in relation to existing theories (Timmermans and Tavory 2012) and so allowed conceptual distinctions to be made through the observation of patterns of similarities and differences (Friedrichs and Kratochwil 2009). Being sensitised to the theoretical framework and immersing in additional theory uncovered from the review (hired hand approach), allowed for further critique between the different conceptualisations of the practitioner engagement observed and so uncovered further divergences from these two theoretical propositions.

It was therefore proposed that practitioner engagement can be divided into three distinct categories, two of which have already been conceptualised, one within the engagement paradigm (Bowen and Graham 2013) and the other as a hired hand approach (Roth 1966). The theoretical framework guiding this study was therefore extended to include these opposing theoretical propositions (Table 2.6).

Table 2.6 Theoretical framework: The characteristics of the 'hired hand' approach and the engagement paradigm

Hired Hand Approach (Roth 1966)	**Engagement Paradigm** (Bowen and Graham 2013)
Who	**Who**
Hired Hand: those assigned a task within a study by the researcher	Knowledge user: those who will act on the knowledge generated by a study
Why	**Why**
Achieve researcher's goals	Co-production of knowledge
Activities	**Activities**
Assigned tasks (for example, participant recruitment or data collection) No involvement in: • the study design • decisions about how the study is carried out • what will be done with the research after it is produced	Researchers and knowledge user collaboratively make decisions on: • the research question • study design • data collection approaches • outcome measures • analysis of results • relevance of findings • dissemination of findings
Characteristics	**Characteristics**
Hired hand: • feels no ownership of the study • adheres to a rigid plan • might have a desire to make a creative contribution but any suggestions are ignored • a pre-formed plan means they cannot openly introduce variations which may make the study more meaningful for them • has little or no opportunity to express any intrinsic interest in the outcome	Knowledge user: • has a genuine and equal partnership with researcher based on mutual respect • shares decision-making power • skills and knowledge of equal value to researcher's skills and knowledge
Outcomes	**Outcomes**
• restricted outputs by hired hand • deviations from the assigned task • causes a study to take longer to conduct • likely to introduce dubious data and interpretations into the process of analysis	• generates relevant research • multidirectional learning

An observed engagement type which does not appear to align with either of these conceptualisations (nor can be accounted for by related concepts), was identified as a conceptual gap. It was hypothesised that the theoretical framework and this existing theory could be modified or extended to better understand practitioner engagement and its effect by formalising and developing a new concept; doing so had the potential to increase understanding of different ways in which engagement could occur and the outcomes that could be experienced. Using abduction, the first steps of recognising a concept and its manifestations were achieved through familiarisation of instances reported in the literature and what followed is a logical analysis of this concept to identify its constitutive parts (Aliseda 2005).

Observed phenomenon/conceptual gap:

Frontline practitioners are engaged by university-based academic researchers in some research activities within a study. Practitioners report this engagement has led to positive changes to their practice and made some contribution to their professional development and researchers have noted benefits for the study and its uptake in practice

The aim therefore was to develop the concept of ‘Researcher Practitioner Engagement’ in the context of academically initiated healthcare research in relation to the professions of nursing, midwifery, occupational therapy, physiotherapy and speech and language therapy. This was achieved by identifying the attributes, antecedents and consequences of the concept in order to propose a definition and validate the concept by establishing necessity. Once this was achieved, further work was then carried out to investigate the extent to which these concept components were experienced.

2.7 Study aim and objectives

Aim

To develop the concept of Researcher Practitioner Engagement in the context of healthcare research and investigate the presence of this concept in nursing, midwifery and therapy* research practices the United Kingdom (UK).

Objectives

1. To fill an identified conceptual gap through development of the concept of ‘Researcher Practitioner Engagement’ in the context of nursing, midwifery and therapy research
2. To establish the necessity for the concept of ‘Researcher Practitioner Engagement’ in the context of nursing, midwifery and therapy research
3. To investigate the extent of the presence of the concept components of ‘Researcher Practitioner Engagement’ in the context of nursing, midwifery and therapy related research in the UK
4. To identify factors for further consideration in the development of ‘Researcher Practitioner Engagement’ for practice and future research

*occupational therapy, physiotherapy, speech and language therapy

2.8 Summary

This chapter has provided a theoretical background through an overview of propositions and approaches which relate to the key concepts of this study. Specific theory to guide practitioner engagement by academic researchers to affect the relevance and utility of a study are elusive and so reasoning for the theoretical framework selected to guide this study was provided. By using the chosen engagement paradigm to inform the design of a scoping review and analysis of the types of engagement observed within the papers included in this review, a conceptual gap was observed in the form of a type of engagement not yet labelled or defined. The need to address this gap through the development of a new concept was identified before any further investigation of this engagement type within the UK healthcare research arena can be carried out.

CHAPTER THREE - RESEARCH DESIGN AND METHODS

3.1 Introduction

This chapter details how the study was designed and conducted in order to meet the objectives outlined in chapter two (section 2.7). The research paradigm which guided the study is firstly discussed followed by consideration of all elements of the study design. Phase 1 and Phase 2 are considered sequentially, with detail given in the transition between the two phases to demonstrate how the data from Phase 1 were integrated into Phase 2 design. Reflections and learning on the methodological, practical and ethical considerations of conducting focus groups using online audio-visual technology in Phase 1 have been shared with the academic community in the International Journal of Qualitative Research (*paper 2*). The paper elaborates on the detail provided in this chapter by adding evaluative consideration of the use of audio-visual technology in qualitative research generally and specific to this study. This paper can be found at the end of section 3.4 after the details of the Phase 1 methods have been considered.

3.2 Research paradigm

The underlying philosophical allegiance of a researcher guides how a research question comes to being and the methodology chosen to address it (Mason 2018; Duberley *et al.* 2012). Philosophical assumptions are housed within paradigms. A research paradigm is a “shared world view that represents the beliefs and values in a discipline and that guides how problems are solved” (Schwandt 2001, p.183), with each paradigm set apart from others through its unique set of ontological and epistemological assumptions. A researcher’s paradigmatic choice will not only be determined by the topic under study, existing literature and theoretical perspectives but also by the researcher's value system, how they view reality and their own ways of knowing (Chilisa and Kawulich 2012). A paradigm will therefore direct the way in which new knowledge is developed by guiding a researcher's endeavours to address a research question, prescribing how they conduct a study, informing choice of methodology and the ways in which data should be collected and analysed (Mesel 2013). Historically, the opposing paradigms of positivism and constructivism dominated the field of health research, however, this situation has evolved considerably with a range of paradigmatic options underpinned by varying philosophical positions now available to health researchers (Chilisa and Kawulich 2012; Denzin *et al.* 2005) and the merging of paradigms now also acceptable practice (Hall 2013; Mertens 2010).

More recently, the pragmatic paradigm has been added to the range of philosophical approaches (Morgan 2014). Adopting a middle ground, it offers researchers more freedom to select methodologies of greatest relevance to a research question as opposed to being confined to the dichotomy of positivist and interpretivist viewpoints (Feilzer 2010; Mertens 2010). The pragmatic research paradigm is rooted in the philosophy of pragmatism, which in 1905, Peirce described as 'a method of using scientific logic to clarify the meaning of concepts or ideas through investigating their potential relationship with the real world' (Nowell 2015, p.143). Pragmatism sits outside of traditional philosophical paradigms which are differentiated by epistemological and ontological perspectives (Heeks and Wall 2018; Morgan 2014) and instead, encapsulates a broader philosophical approach which offers practicality to research design (Morgan 2014). By emphasising common sense and practical thinking, this paradigm puts aside ontological and epistemological stances in order to replace the question of ‘what is true?’ with ‘what is useful?’ within a ‘what works?’ approach (Mertens 2015) to achieve its intention of solving problems (Kaushik and Walsh 2019). Its principles embrace the use of the methodological approach which best suits the research question including plurality of methods and diverse methodological combinations (Kaushik and Walsh 2019). As the principles and ideas of pragmatism, outlined by scholars who have appraised its utility show, the major underpinning is that knowledge is always based on experience (Kaushik and Walsh 2019).

Table 3.1 Underpinning principles of the pragmatic paradigm

Morgan (2014)	Kaushik and Walsh (2019)
Actions cannot be separated from the situations and contexts in which they occur	A world of unique human experiences in which, instead of universal truths, there are warranted beliefs, which take shape as we repeatedly take actions in similar situations and experience the outcomes
Actions are linked to consequences in ways that are open to change	If the situations of the action change, their consequences would also change, despite the actions being the same
Actions depend on worldviews that are socially shared sets of beliefs. Worldviews can be both individually unique and socially shared	No two people have exactly identical experiences, so their worldviews can also not be identical. However, there are always varying degrees of shared experiences between any two people that lead to different degrees of shared beliefs

The researcher’s combined experiences over 20 years as an occupational therapist in a clinical setting, a research therapist within the UK National Health Service (NHS) and an academic within a UK university, have influenced her beliefs about how knowledge is developed. These roles provided insight into, not only the similarities and prevailing differences in both academic and practice organisations, but an understanding of the complexities that make social realities within these settings heterogeneous. This experiential knowledge, combined with the specific needs of the proposed study and how it has developed thus far, make a pragmatic approach ideal to ensuring the chosen methodology can best address the identified conceptual gap and further explore the concept of Researcher Practitioner Engagement in practice.

Pragmatic researchers are open to the emergence of unexpected data and are therefore curious and adaptable (Feilzer 2010). A key strategy which aids this pragmatic trait, and so allows the researcher to acquire new ideas, is abductive reasoning (Friedrichs and Kratochwil 2009; Aliseda 2005). Peirce, the founder of pragmatism, first proposed the notion of abductive reasoning as a form of logic which guides towards hypothesis, a generative principle of developing knowledge and the process by which theories and conceptualisations are created (Rahom 2010). As the underlying logic of pragmatism (Aliseda 2005), and a form of inference (Rahom 2010), abduction is described as “a creative process which generates new theories and hypotheses when surprising evidence leads a researcher away from an old idea towards a new theoretical insight” (Timmermans and Tavory 2012, p. 170). Akin to a puzzle, abduction causes a researcher to search for an explanation when existing theoretical explanations are absent or insufficient (Ashworth 2019; Friedrichs and Kratochwil 2009). Abductive reasoning differs from its inductive and deductive counterparts in that it requires greater engagement with theory and so enables the researcher to make observations from data that may otherwise have been overlooked (Ashworth 2019; Timmermans and Tavory 2012). As detailed in chapter two (section 2.6.2), abduction was used when logical connections were made between the data retrieved from the scoping review and the theoretical framework of this study

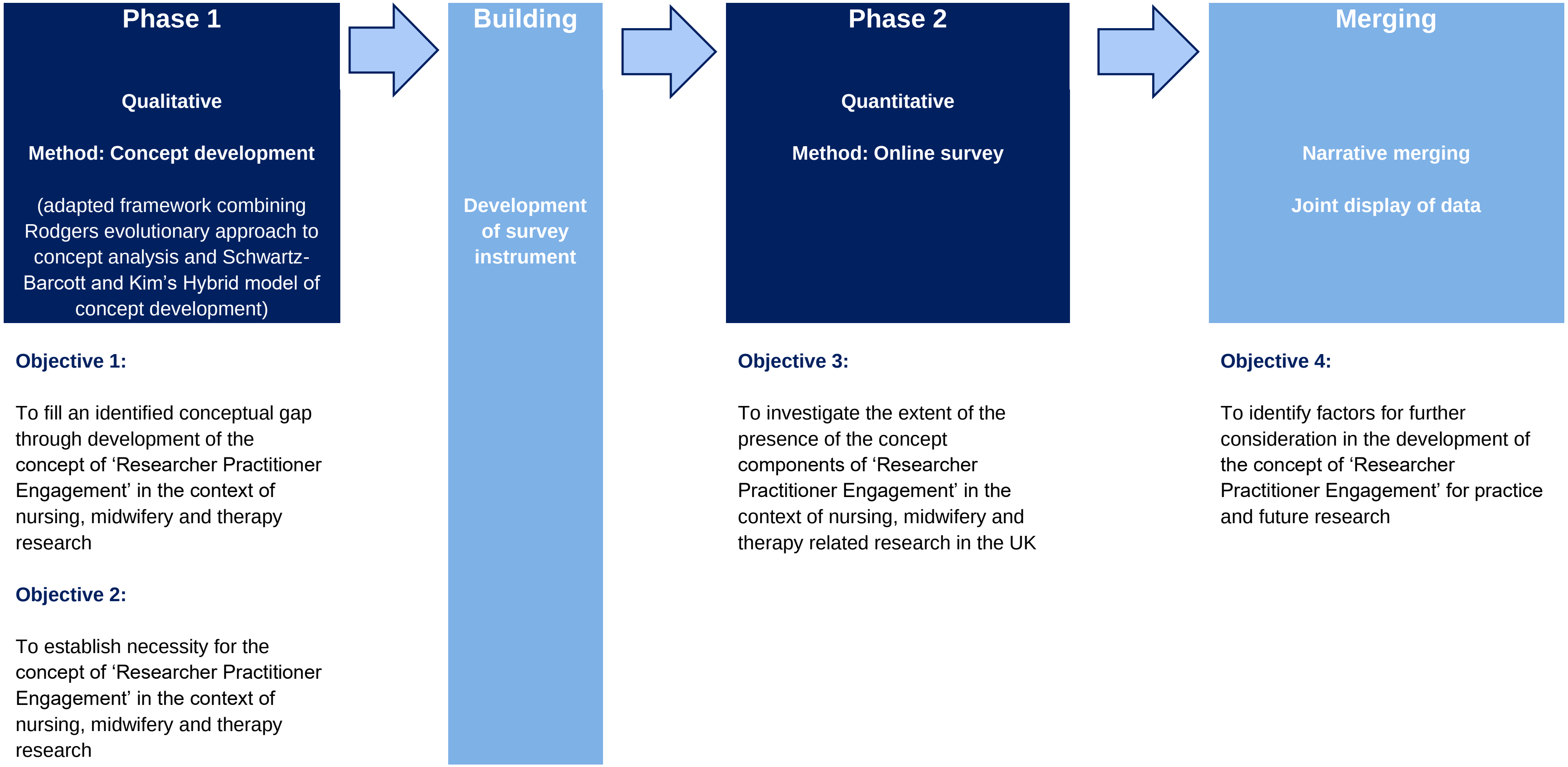
(Feilzer 2010) and led to identifying a conceptual gap and the subsequent formulation of the study objectives.

3.3 Research design

A pragmatic perspective enables the researcher to question why a study should be conducted in a particular way (Morgan 2014) and to adopt the methodological approach best suited to the research question (Kaushik and Walsh 2019). At top level, the need to analyse this proposed concept to explicitly define the phenomenon under consideration (*objective 1*) before further work could be carried out to investigate the presence of its specific components (*objective 3*), necessitated a pragmatic approach which would accommodate methods to address these separate but interrelated and sequential objectives. As is justified in greater detail in *paper three*, objectives 1 and 2 necessitated a qualitative approach to the development of the immature concept under consideration. Whereas objective 3 required a quantitative approach to establish the presence of the concept components when this phenomenon is experienced across a large sample. As the concept was not yet clearly defined, the variables were unknown and so Phase 1 was completed to inform the design of a tool which could then be used to collect data to suitably address objective 3.

3.3.1 Adopting a mixed methods approach

Mixed methods research is an approach which allows this to be achieved by collecting and integrating two forms of data sequentially (Creswell and Clark 2011). Using an exploratory sequential design, qualitative findings from a first phase can then inform the methods used in phase two. Although many writers view qualitative and quantitative approaches as incongruent, mixed methods is a methodology often associated with pragmatism as it adds practical value (Heeks and Wall 2019) by allowing for a methodological mix to better address the research question (Johnson and Onwuegbuzie 2004) whilst making use of the strengths of both approaches. One anticipated outcome is stronger evidence from which conclusions can be drawn through the divergence, convergence and corroboration of findings from using both approaches (Johnson and Onwuegbuzie 2004). A diagrammatic overview of the mixed method study design is presented in Figure 3.1. The following sections then detail the specifics relating to the design of each phase of this exploratory sequential mixed methods study.



Phase 1

Qualitative

Method: Concept development

(adapted framework combining Rodgers evolutionary approach to concept analysis and Schwartz-Barcott and Kim's Hybrid model of concept development)

Objective 1:

To fill an identified conceptual gap through development of the concept of 'Researcher Practitioner Engagement' in the context of nursing, midwifery and therapy research

Objective 2:

To establish necessity for the concept of 'Researcher Practitioner Engagement' in the context of nursing, midwifery and therapy research

Building

Development of survey instrument

Phase 2

Quantitative

Method: Online survey

Objective 3:

To investigate the extent of the presence of the concept components of 'Researcher Practitioner Engagement' in the context of nursing, midwifery and therapy related research in the UK

Merging

Narrative merging

Joint display of data

Objective 4:

To identify factors for further consideration in the development of the concept of 'Researcher Practitioner Engagement' for practice and future research

Figure 3.1: Overview of the exploratory sequential mixed methods study design

3.4 Phase 1: Qualitative phase (Objectives 1 and 2)

The hybrid model of concept development (Schwartz-Barcott and Kim 2000) was reasoned as an appropriate framework on which to base the design of the qualitative phase of this study. This three-stage approach begins with theoretical strategies using existing literature, accompanied by qualitative methods to generate empirical data developed from actual cases and analytical techniques to combine both perspectives (Schwartz-Barcott and Kim 2000; Morse 1996; Hupcey *et al.* 1996). Further guided by pragmatic perspectives, the first two phases of this model were adapted to both fully address objectives 1 and 2 and to optimise rigour and usefulness of the findings. The first stage, the theoretical phase (section 3.4.1), was guided by Rodgers (2000) concept analysis framework. Doing so, overcame the limitations of this broad approach to the theoretical phase proposed by Schwartz-Barcott and Kim (2000), who provide little structure beyond identification and review of relevant literature, and thereby provided a systematic, transparent framework to inductively capture the essence of the concept. As discussed in greater detail in section 3.4.2 and *paper 3*, the second phase, (fieldwork phase) also diverged from the format originally proposed by its authors, to a method that would enable experiences of engagement to establish the components and essence of this concept. The third analytical phase remained unchanged and was followed as Schwartz-Barcott and Kim (2000) intended by integrating the data from the theoretical and fieldwork elements. Figure 3.2 (section 3.4.3) outlines the concept development process that was followed in the qualitative phase of the mixed methods study. Further reasoning and justification around this choice of method is provided in *paper 3*.

3.4.1 Theoretical phase of the concept development

In this section, the two main activities within Rodger’s concept analysis framework, identifying sources followed by their analysis, are outlined.

3.4.1.1 Identifying the concept and sources for analysis

Rodgers (2000) evolutionary approach to concept analysis, used to structure this theoretical phase, follows a series of steps to firstly identify the concept, its context and any surrogate terms, to inform the selection of the most appropriate resources from which the concept can be analysed (Tofthagen and Fagerstrom 2010). Analysis follows, from which the attributes, antecedents and consequences of the concept are established. The initial steps of identifying the concept under consideration and sourcing appropriate resources from which the concept components could be analysed, had been completed during the scoping review (Table 2.5). As a new concept, not yet labelled or defined, absence of existing definitions meant these antecedents, attributes and consequences must be abductively inferred from observed instances. All papers from the scoping review in which the type of engagement observed matched the observed phenomenon (n=10), were therefore taken forward for analysis. Rodgers (2000) asserts the need to consider surrogate terms during this process, that is, semantic means of expressing the concept or representing its ideas other than the word selected for analysis (Tofthagen and Fagerstrom 2010). Within the scoping review, ‘involvement’, ‘engagement’, ‘participation’, ‘collaboration’ and ‘interaction’ were recognised as interchangeable terms to represent the phenomenon under consideration and as each of these synonyms were discovered, were iteratively added to the search strategy, enhancing the credibility of the review in identifying relevant examples. However, learning during subsequent analysis of these papers highlighted that terms which referred to the specific role a practitioner could adopt when being engaged in a study were not included in the original search, and therefore may have caused examples of the observed phenomenon to have been overlooked. The search was repeated to allow for inclusion of the additional terms ‘recruiter’ and ‘data collector’ for completeness and to identify any other relevant publications which may have become available since the scoping review search was completed (Appendix 2).

Related concepts should also be identified, that is, terms which align closely with the concept under consideration but where not all characteristics are shared (Rodgers 2000). Haase *et al.* (2000) stress the importance of in-depth consideration of concepts closely related to the concept under consideration as analysis of their characteristics can enhance understanding of the concept itself. Commonly used in health research, the term ‘stakeholder engagement’ refers collectively to groups potentially affected by a study’s outcomes. Analysis of stakeholder engagement in health research literature has found practitioners to be the second most referred to subgroup after patients, public and carers (Camden *et al.* 2015; Concannon *et al.* 2014). It was therefore reasoned imperative to search for definitions of stakeholder engagement and include those within the analysis where it was clear from the context of the definition that it was being used to refer to healthcare practitioners. A search for iterations of ‘Researcher Practitioner Engagement’ including ‘research practice engagement’, ‘practice researcher engagement’ and ‘practitioner researcher engagement’ was also conducted (Appendix 2), however no sources specific to health were found.

3.4.1.2 Analysing sources to identify concept components

The heart of a concept are the attributes, the characteristics which make it possible to identify that a situation or instance can be categorised as the concept under consideration (Rodgers 2000). For the concept to occur, all attributes must be present (Rodgers 2000). Antecedents are the events that are necessary prior to the concept occurring and consequences are outcomes brought about by the concept (Rodgers 2000). All papers which included instances of RPE were transferred to NVivo™ (QSR International 2017) qualitative data analysis software (Version 12) along with definitions of related concepts. Qualitative content analysis was used to analyse these data (Krippendorff 2013; Tofthagen and Fagerstrom 2010). Using the questions listed in Table 3.2 to extract data, patterns in the text were identified by first coding sections where an antecedent, attribute or consequence was inferred. Within each of these three categories, text was again coded and then simplified by reducing these data to higher level categories within each to determine patterns in relation to the specific attributes, antecedents and consequences of the concept (Krippendorff 2013; Tofthagen and Fagerstrom 2010). Reading, coding and categorising was an iterative process; categories were continually revisited as the researcher interpreted observations within the text until it was reasoned that closure had been reached.

Table 3.2 Questions posed to the literature to identify the concept components of Researcher Practitioner Engagement from instances and related terms

	Definition (Rodgers 2000)	Question posed to the literature
Attribute	Characteristics that make it possible to identify that a situation or instance can be categorised as the concept under consideration	What are the reported requirements for successful engagement of frontline practitioners by academic researchers in the research process?
Antecedent	Events that are necessary prior to the concept occurring	What are the reported pre-requisites for successful engagement of frontline practitioners by academic researchers in the research process?
Consequence	Outcomes brought about by the concept	What are the reported benefits and outcomes of engagement of frontline practitioners by academic researchers in the research process?

3.4.2 Fieldwork phase of the concept development

The fieldwork phase of the hybrid model of concept development aims to “corroborate and refine a concept by extending and integrating analysis began in phase one with empirical observations” (Schwartz-Barcott and Kim 2000, p.137) and uses the steps of qualitative research to assist in defining the concept as opposed to offering explanation (Schwartz-Barcott and Kim 2000). The primary objective was to confirm, refine, expand and/or exclude the attributes, antecedents and consequences of the concept inferred from the first theoretical phase based on the perspectives of academic researchers and frontline practitioners who had experienced the concept from across a variety of relevant settings. The secondary objective was to establish if and why academic researchers and practitioners perceived the concept to be necessary; what Rodgers (2000) refers to as the concept significance, identify if and how attributes could be measured (empirical referents) and establish opinion of the chosen concept label (Meleis 2012).

Table 3.3 Objectives of the fieldwork phase of the concept development (Phase 1)

Objectives of Fieldwork Phase
1. To confirm, refine, expand and/or exclude the attributes, antecedents and consequences of the concept inferred from the theoretical phase based on experiences of researchers and practitioners
2. To establish necessity of the proposed concept from researchers' and practitioners' perspectives
3. To establish if and how Researcher Practitioner Engagement is measured
4. To establish researchers' and practitioners' perspectives of the suitability of the selected concept label

These objectives were achieved by presenting the theoretical phase outcome to academic researchers and frontline practitioners and asking them to discuss, in focus groups, the relevance of each concept component whilst also considering any omissions from the concept based on their experiences. Focus groups were chosen to enable participants to discuss their perspectives, thereby adding depth to the data by enabling observation, through interactions, of divergent or converging views of the concept components as the relevance of each was discussed. This was deemed important due to variations in the settings from which participants had been recruited and therefore experienced the concept, depending on their geographical location, discipline, area of speciality and role.

3.4.2.1 Focus group pilot study

Prior to this fieldwork phase, pilot testing was carried out. The overarching reason for conducting a pilot focus group was to optimise the methodological rigour of this fieldwork phase by identifying any potential threats to the trustworthiness of the data collection process and/or the participant experience. Pilot testing was carried out in March 2018 with five PhD researchers from the Faculty of Life and Health Sciences at Ulster University who responded to an all faculty email inviting those who had experience of engaging a frontline practitioner in their PhD study to take part. The procedure closely followed that which was planned for the fieldwork phase. Evaluation was two-fold; pilot participants provided feedback on their experiences via an anonymous online questionnaire and the researcher reflected on all steps taken during recruitment, data collection and data analysis to identify any areas of concern and improvement. The main benefit of this pilot was the ability to test the focus group schedule in meeting the aim of refining, elaborating or eliminating concept components and providing the researcher with the opportunity to develop skills to facilitate this appropriately whilst managing a group in an online environment (Chioncel *et al.* 2003). Following evaluation, actions necessary prior to the main data collection phase were addressed which contributed to the overall trustworthiness of the fieldwork phase and participant experience. Further detail pertaining to the process, evaluation and outcome of this pilot can be found in Appendix 3.

3.4.2.2 Sampling and recruitment

Both the experiences of academic researchers and frontline practitioners were required to develop this concept. To obtain contextual variation, recruitment for both groups was UK wide, across all disciplines considered in the study and across roles. To achieve this, purposive sampling was used. A detailed recruitment strategy was designed, with separate arrangements for each group (Appendix 4) with specified inclusion and exclusion criteria (Table 3.4).

Table 3.4 Inclusion and exclusion criteria for qualitative fieldwork phase of concept development (Focus groups)

Academic Researchers	Frontline Practitioners
Inclusion criteria	
Academic researchers or doctoral researchers based in faculty/college of health-related subject areas within Higher Education Institute in the UK	Front line practitioners (nursing, midwifery, occupational therapy, physiotherapy, speech and language therapy) delivering care to service users in a health care context
Principal investigator of at least one health research study completed within the past 3 years (concerning nursing, midwifery or therapy practice)	Engagement by an academic researcher from a university setting in at least one health-related research study (other than as a participant) within the past 3 years
Self-reported experience of engagement of practitioner(s) in a role other than as a study participant in at least one research project in the past 3 years	
Exclusion criteria	
Employed by a healthcare provider	In a role with formal research responsibilities (e.g. Clinical Research Nurse, Clinical Therapist)
Solely employed with an organisation or system specifically funded to support collaborative practices across academic and health organisations (for example CLAHRC)	

The main recruitment channel for academic researchers was through personal invitations to university email accounts (Appendix 5). Using the list of the Council of Deans of Health member universities in the UK (n=84), the email addresses of research centre leads were sourced from the university webpages. Additional academic researchers’ details were identified from publicly available research protocols on what was then known as the UK clinical trials gateway but now replaced with the ‘Be part of research’ campaign

(NIHR 2019b). Each protocol which indicated a study was ongoing or had been completed in the preceding three years was reviewed to identify principal investigators of studies where engagement of a practitioner from one of the designated disciplines was indicated within the protocol and/or a practitioner was listed as a co-applicant.

In total 395 personalised invitations to participate were emailed with a request to cascade to relevant research colleagues and to practitioners with whom they had engaged. Frontline practitioners were also recruited through advertisements in national profession specific publications and via a strategic Twitter campaign to identify those with relevant experience (Appendix 6). A link to a 10-item online recruitment questionnaire hosted in Qualtrics© (Qualtrics 2019) was included (Appendix 7) to establish that volunteers met the study inclusion criteria and to obtain data on their location, discipline, role and engagement experience over the preceding three years. In total, 40 academic researchers and 20 frontline practitioners completed the recruitment survey. A Doodle poll was sent to volunteers who met the inclusion criteria and focus groups scheduled based on availability. Where participants were available for more than one session, the researcher ensured a spread of disciplines across groups where possible.

3.4.2.3 Data collection

Synchronous online focus groups were conducted to obtain data for this phase of the study using audio-visual technology (Zoom©) via the internet. Doing so, optimised both geographical reach, by enabling a purposive sample of participants to be drawn from across the United Kingdom (UK), and flexibility in scheduling groups to accommodate work patterns and availability. In planning this novel approach, little to support or guide the novice researcher was available. Although the use of the internet to gather data from group interviews or focus groups is certainly a more popular choice due to the advantages it offers, synchronous options are less discussed in the healthcare literature. This paucity of guidance and the lessons learnt prompted the researcher to collate, analyse and disseminate reflections on the methodological, practical and ethical implications when planning and conducting these online groups (*paper 2*). Published in the International Journal of Qualitative Methods in November 2019, this paper provides greater detail on why this method was chosen. The procedure and implications for this study can be found at the end of section 3.4.3.

3.4.2.4 Procedure

Once a participant was scheduled to join a focus group and returned a completed informed consent form (Appendix 8), they were sent a one-page summary of the theoretical phase outcome via email seven days prior to the scheduled group. Focus groups were facilitated by the researcher. Each followed a consistent format of introductions, collaborative setting of ground rules, and a 3-minute pre-recorded PowerPoint presentation (Appendix 9) was shown on screen at the beginning of each group to provide all participants with consistent background information to set the context for the concept development. The audio-visual software had a facility which enabled screen sharing to facilitate this presentation and which allowed for the outcome of the theoretical phase to be displayed to participants throughout the discussion. The focus group schedule followed the format of the theoretical phase outcome by sequentially addressing each concept component and asking the focus group participants if they agreed or disagreed that the component was relevant to the concept and give reasoning for their responses (Appendix 10). In addition, participants were asked if they felt the concept was necessary, if they had used or were aware of ways in which the attributes of the concept could be measured, and their opinion of the chosen label to represent the phenomenon.

3.4.2.5 Data analysis

Audio and visual recordings were made of each group discussion (further to written consent from each participant) to allow for transcription and observation of verbal and non-verbal communications. Verbal communications were transcribed into a Microsoft word document and then transferred into NVivo™ qualitative data analysis Software (QSR International 2017). The audio-visual recording was then watched again, and non-verbal communications were noted to observe agreements or disagreements with verbal points made. To organise the data, the outcome of the theoretical phase was used in the first instance as a coding matrix within NVivo™ (QSR International 2017) to deductively categorise these data corresponding to each of the proposed concept components. Qualitative content analysis was then carried out in two stages; firstly, verbal and non-verbal communications were analysed to establish agreement, disagreement, partial agreement or silence with each concept component proposed in the theoretical phase, and whether this was indicated verbally or non-verbally by each participant was also recorded. As participants did not always explicitly state whether they agreed or disagreed with the concept component, latent analysis was required at times to establish agreement status (Bengtsson 2016). Table 3.5 details the operational definitions used to categorise these communications to establish agreement levels. Where a decision on a participant's opinion on the relevance could not be established from verbal or non-verbal communications, this was labelled as 'silent'. The purpose of quantifying agreement levels in this way was not to obtain consensus but to provide insight into the aspects of the concept which should remain and those which needed to be reconsidered.

Table 3.5 Analysis conducted to establish agreement with proposed concept components from verbal and non-verbal communications within focus groups R1-4 and P1-3

Level of agreement	Operational definition of agreement level
Agreement	When the verbal response given by a participant indicated agreement using phrases such as 'I agree' or when non-verbal agreement was observed, such as head nodding in response to verbal agreement being offered by another participant
Partial agreement	When a participant indicated verbally that they agreed with the concept component to some extent by explicitly stating this was the case, and/or by offering a suggestion to refine or elaborate on the proposed component, or when non-verbal communications indicated agreement with suggested changes by another group member
Disagreement	When the verbal response given by a participant indicated disagreement using phrases such as 'I disagree' or when non-verbal agreement was observed, such as head nodding in response to verbal disagreement being offered by another participant
Silence	When no verbal or non-verbal response was offered by the participant OR Inadequate verbal or nonverbal data were available to code their opinion
Absent	When the participant was not present in the group due to late arrival or had left the group prior to its completion

Manifest analysis was then carried out by categorising data to identify reasons to support decisions and inductively identify patterns in any suggested changes to individual concept components. Qualitative content analysis was also used to identify patterns in responses relating to if and how participants measured the presence of the attributes of Researcher Practitioner Engagement or suggestions as to how this could be achieved. Finally, patterns relating to participants' perceptions of the concept label were also observed.

3.4.2.6 Methodological rigour

When designing Phase 1 of this study, both Lincoln and Guba's (1985) and Tracy's (2010) evaluative criteria were used to guide choices to optimise the quality of this qualitative phase. The concept of rigour is of paramount importance within qualitative research due to the threats that can be imposed by factors relating to the interpretative nature of the data analysis process and the researcher as a tool within the design, collection and analysis of qualitative data processes. Lincoln and Guba's (1985) evaluative criteria and corresponding language are considered as a universally accepted framework for referring to the various elements of the trustworthiness of qualitative study, however, more recently, their use of alternative terms to those used in quantitative research have been challenged and the use of the terms validity and reliability used in both fields encouraged (Morse 2012). Lincoln and Guba's (1985) framework addresses the need for 1) credibility, 2) transferability, 3) dependability and 4) confirmability. Tracy's (2010) framework advocates that in addition to credibility, quality qualitative research is judged by a worthy topic, which makes a contribution and coherently sets out what it intends to do. Steps taken within Phase 1 of the study to ensure the quality of this qualitative phase are considered below.

3.4.2.6.1 Credibility

Lincoln and Guba (1985) align credibility to the concept of internal validity within a quantitative study or more specifically, the truth of the findings and defined by Tracy (2010) as the plausibility of a study's findings. A range of strategies to optimise credibility are available to the qualitative researcher, depending on their applicability to the study design, many of which were employed within this study. Firstly, as recommended by Tracy (2010), member checking, also known as participant validation (Birt *et al.* 2016), offered participants the opportunity to indicate agreement or disagreement with the way in which data had been interpreted and presented by the researcher (Carlson 2010). Demonstrating that a researcher's interpretation is congruent with a participant's experience contributes to the credibility of findings by minimising the opportunity for researcher bias (Birt *et al.* 2016; Tobin and Begley 2004). A two-page summary of the corresponding focus group was sent to each participating member within four weeks of the group, providing an overview of discussions and summarising key points relating to each concept component with a request to confirm accuracy. All were advised that no response indicated satisfaction with the content. Eight participants (five researchers, three practitioners) provided confirmatory responses and nine did not respond. Examples of member checking summaries sent to participants can be found in Appendix 11. In addition, prolonged engagement and persistent observation were achieved through a contextually varied sample, which allowed for a thick, rich data set to be collected across the researcher and practitioner participant groups, providing variation and depth in relation to the phenomena under consideration (Morse 2012).

The main action taken within this fieldwork phase to optimise credibility was methodological triangulation. Described as "the use of more than one method to investigate a phenomenon" (Risjord *et al.* 2001, p.40), this approach can help to establish validity both through confirmation and by enhancing understanding of the concept through completeness (Risjord *et al.* 2001; Breitmayer *et al.* 1993). Four academic researchers scheduled to take part in one focus group (Focus Group R5) were not exposed to the outcome of the theoretical phase. Instead, they were asked to identify what they perceived the attributes, antecedents and consequences of the concept to be, solely from their experiences using the questions that had been addressed in the literature in the theoretical phase to form the focus group schedule (Table 3.2). To maintain consistency with the other focus groups, and collect additional data, participants were also asked their opinion on the need for this proposed concept, thoughts on the chosen label and methods of concept measurement. To prevent researcher bias, this focus group was facilitated by a member of the research team (PhD supervisor) who had not been exposed to the final outcome of the theoretical phase and was observed by the researcher. Adopting an exploratory and inductive approach to this additional focus group meant participants were not led by the terminology defined by the theoretical phase, eliminating researcher bias. Data from this focus group were firstly mapped to the theoretical phase outcome using the concept components as a coding matrix to deductively analyse these data. This assisted with identifying where convergence had occurred with the attributes, antecedents and consequences of the theoretical phase (*confirmation*). Categorisation of additional data that did not fit within this matrix was carried out and so identified any divergence and potential additional concept components (*completeness*). Recruitment challenges prevented the same triangulation process from being repeated with practitioner participants.

3.4.2.6.2 Confirmability

Lincoln and Guba (1985) align confirmability with objectivity or the extent to which findings have not been biased. The structured approach to data collection using the outcome of the theoretical phase meant that no changes were made to the focus group schedule as data collection progressed, and so consistency was maintained. The addition of the triangulation group, as described above, also contributed to minimising any researcher bias which could have been introduced through use of this approach to ensure completeness, and therefore identify any elements that may have been overlooked or misrepresented.

Throughout data collection, the researcher kept a journal which was iteratively added to immediately following each focus group, during transcription, and throughout data analysis to record interpretations and ensure transparency in the analysis process. This journal served two purposes; firstly, the nature of the analytical phase of the concept development, meant that interpretations played a key role as the researcher moved iteratively between theory, findings of focus groups and triangulation data. These interpretations were documented as part of the analytical phase (section 4.4) and therefore provide transparency in demonstrating how the final outcome of the concept development was reasoned. Secondly, to ensure sincerity (Tracy 2010), the researcher engaged in self-analysis throughout the study design, data collection and data analysis in relation to potential subjective influences (Finlay 2002). Excerpts from this journal have been provided to demonstrate how critical reflexive thinking was documented throughout this study (Appendix 12). In addition, excerpts were formally analysed and used as the basis of a journal article to share reflections on methodological, practical and ethical challenges of using online focus groups as a data collection tool (*paper 2;* section 3.4.3) and so further demonstrating transparency (Tracy 2010).

3.4.2.6.3 Dependability

Dependability aligns with reliability, that is, the consistency and repeatability of a study’s findings (Lincoln and Guba 1985). Again, using the outcome of the theoretical phase as a focus group schedule standardised the format and maintained consistency as no changes were made as data collection progressed. Use of the supervision process enabled other members of the research team to examine data throughout the data collection, analysis and interpretive processes to ensure final outcomes were supported by the data that had been collected.

3.4.2.6.4 Transferability

Transferability is parallel to external validity or the applicability of the findings in other settings (Lincoln and Guba 1985). Data were collected via the recruitment survey to summarise the characteristics of researchers and practitioners who had contributed to the concept development, including their discipline and role and details on their engagement experiences. This was supported with detailed inclusion criteria and elaborated with further contextual data that were derived during focus group discussions. Doing so enabled the context of the study to be reported in as much detail as possible to ensure it would resonate with those to whom the study would have relevance (Tracy 2010).

3.4.2.7 Research governance and ethical considerations

Healthcare researchers must adopt an ethical approach to their work by respecting both data protection laws and legislation designed to protect the rights of research participants (Denscombe 2014). When conducting healthcare research in the United Kingdom (UK), the General Data Protection Regulation (GDPR) (Information Commissioner’s Office 2018) must be adhered to in order to ensure the security of data. In addition, the principles of good practice stipulated within the ‘UK policy framework for health and social care research’ (Health Research Authority (HRA) 2018) should be followed, to both protect the interests of those who take part and to quality assure research processes (HRA 2018). This policy outlines 15 principles (HRA 2018); although Phase 1 of this study was considered low risk, in particular the principles of respect for privacy and choice specific to issues which can be raised by conducting research in an online environment, needed to be taken into account. Assessment of the application of these principles was carried out at local level in accordance with the Ulster University Research Governance Policy (Ulster University Research Governance Office 2018), and approval gained from the Institute of Nursing and Health Research Governance Filter Committee in September 2017 (Appendix 13). Further detail on how these principles were judiciously applied within this study are detailed below, with signposting to corresponding documentation. Principle 2, competence, was assured as the supervisory and advisory team were suitably qualified by education and experience, and the researcher undertook appropriate training to advance competence in all aspects of the conduct and management of this study (Appendix 14). The pragmatic approach adopted meant that, on occasion, it was deemed necessary to make changes to the study design to optimise the credibility. Changes were approved by the filter committee through established formal processes. Changes are listed in Appendix 15 alongside corresponding completed examples of RG6 documentation.

3.4.2.7.1 Anonymity

The anonymity of participants to other focus group members cannot be guaranteed by a researcher as visual recognition by other group members in settings which involve in person discussions cannot be discounted. Participants were therefore requested to respect the anonymity of others by not discussing membership outside of the focus group (Appendix 16). Anonymity can, however, be guaranteed in dissemination; therefore, no identifying factors were or will be used by the researcher in the reporting of the findings and dissemination. Each participant was allocated a code to anonymise data; this document was encrypted and held separately from focus group data to avoid cross referencing. In addition, when participants referred to any details which had the potential to indicate their identity (such as a particular study or geographical location), these data were transcribed from the audio recordings in such a way that removed these identifiable elements. These actions were communicated clearly during the recruitment process in the Participant Information Sheet (PIS) and participants confirmed they had been appraised of, and agreed to, each of these points when they signed the study consent form (Appendix 8).

3.4.2.7.2 Confidentiality

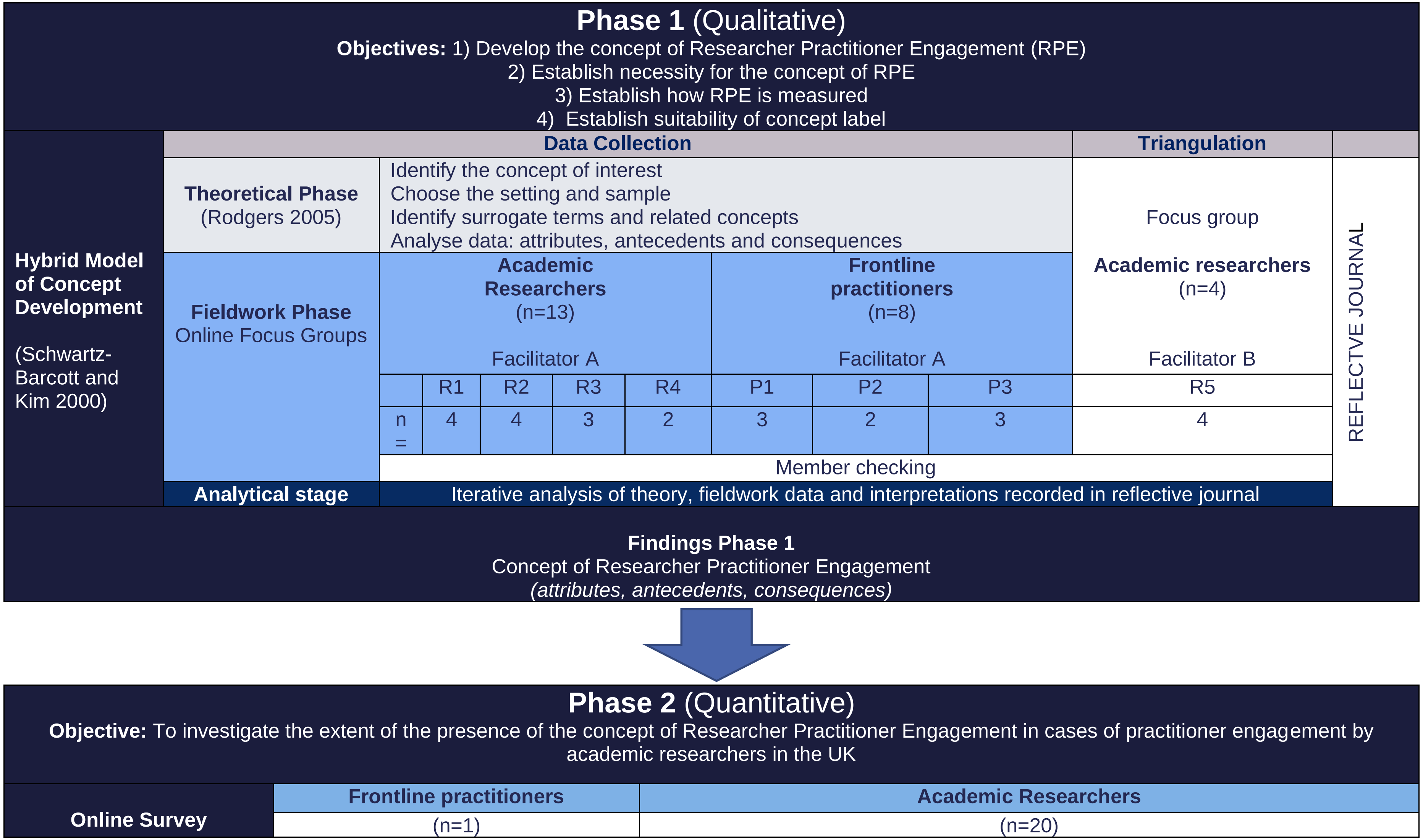
Participants were asked via the consent form (Appendix 8) to declare that they were able to take part in the online discussions in a confidential environment where others were not party to hearing or observing discussions and to respect and maintain the anonymity and confidentiality of other groups members outside of the focus group. Access to data was restricted to the research team; transcription of the data was carried out by a third party (University employee) but only audio was made available, participants' personal details were not provided and the transcriber signed a confidentiality agreement. The research governance office at Ulster University have the right to request access to this data for audit purposes; should this request be made, anonymised data will be made available. In line with General Data Protection Regulation (2018), only personal data deemed necessary for this study were collected; all personal data and transcriptions were held securely on password protected Ulster University IT systems, physical copies kept in a locked filing cabinet, recordings removed from any devices once transcription was complete and all data will be securely archived for ten years after the end of the study in the line with Ulster University's governance policy (Ulster University 2018).

3.4.2.7.3 Right to withdraw

Participants were free to withdraw prior to the focus group and at any time during the focus group by leaving the online discussions. However, due to the discursive nature of this data collection method and the impact contributions may have had on the input from others, participants were made aware that any data collected up until the point of withdrawal would be retained for analysis; this was clearly communicated via the Participant Information Sheet (Appendix 16) and Informed Consent Form (Appendix 8).

3.4.3 Analytical phase of the concept development

The key purpose of this final phase of the process is to integrate the literature and empirical data (Schwartz-Barcott *et al.* 2002). Here, the researcher should step back from fieldwork findings and reconsider these in light of the initial focus of interest and consider the applicability and importance of the concept within the selected population (Schwartz-Barcott and Kim 2000). The nature of the fieldwork phase meant that analysis went beyond this broad consideration, not only analysing relevance of the concept in totality, but analysing each specific component. Although Schwartz-Barcott and Kim's (2000) model depicts this phase as both discreetly separate and subsequent to the overlapping theoretical and fieldwork phases, in the development of this emerging concept, analysis began whilst collecting data by capturing researcher interpretations in a reflective journal. Interpretation was a key tool in this analytical process. Experiential data were used to refine the concept components, returning to the data extracted from the instances and definitions in the theoretical phase to view this with the experiential lens of the participants. Similarly, adopting an inductive approach in the triangulation group (Focus group R5), allowed the researcher to use the experiential lens of academic researchers' perceptions and language which had not been influenced by the terminology defined by the researcher. Doing so allowed for further refinement, assisted with the delineation of attributes to detangle the complexity of the overlapping and co-dependency of attributes identified, and clarified the most appropriate language to use to represent concept components.



Phase 1 (Qualitative)

Objectives: 1) Develop the concept of Researcher Practitioner Engagement (RPE)
2) Establish necessity for the concept of RPE
3) Establish how RPE is measured
4) Establish suitability of concept label

Hybrid Model of Concept Development (Schwartz-Barcott and Kim 2000)

	Data Collection								**Triangulation**	
Theoretical Phase (Rodgers 2005)	Identify the concept of interest Choose the setting and sample Identify surrogate terms and related concepts Analyse data: attributes, antecedents and consequences								Focus group **Academic researchers** (n=4) Facilitator B	REFLECTVE JOURNAL
Fieldwork Phase Online Focus Groups	**Academic Researchers** (n=13) Facilitator A					**Frontline practitioners** (n=8) Facilitator A				
		R1	R2	R3	R4	P1	P2	P3	R5	
	n =	4	4	3	2	3	2	3	4	
	Member checking									
Analytical stage	Iterative analysis of theory, fieldwork data and interpretations recorded in reflective journal									

Findings Phase 1
Concept of Researcher Practitioner Engagement
(attributes, antecedents, consequences)

Phase 2 (Quantitative)

Objective: To investigate the extent of the presence of the concept of Researcher Practitioner Engagement in cases of practitioner engagement by academic researchers in the UK

	Frontline practitioners	**Academic Researchers**
Online Survey	(n=1)	(n=20)

Figure 3.2 Diagrammatic overview of Phase 1 and Phase 2 of exploratory sequential mixed methods study

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STEER: Factors to Consider When Designing Online Focus Groups Using Audiovisual Technology in Health Research

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Abstract

Technological advancements and ease of Internet accessibility have made using Internet-based audiovisual software a viable option for researchers conducting focus groups. Online platforms overcome any geographical limitations placed on sampling by the location of potential participants and so enhance opportunities for real-time discussions and data collection in groups that otherwise might not be feasible. Although researchers have been adopting Internet-based options for some time, empirical evaluations and published examples of focus groups conducted using audiovisual technology are sparse. It therefore cannot yet be established whether conducting focus groups in this way can truly mirror face-to-face discussions in achieving the authentic interaction to generate data. We use our experiences to add to the developing body of literature by analyzing our critical reflections on how procedural aspects had the potential to influence the data we collected using audiovisual technology to conduct synchronous focus groups. As part of a mixed methods study, we chose to conduct focus groups in this way to access geographically dispersed populations and to enhance sample variation. We conducted eight online focus groups using audiovisual technology with both academic researchers and health-care practitioners across the four regions of the United Kingdom. A reflexive journal was completed throughout the planning, conduct and analysis of the focus groups. Content analysis of journal entries was carried out to identify procedural factors that had the potential to affect the data collected during this study. Five themes were identified (*S*tability of group numbers, *T*echnology, *E*nvironment, *E*valuation, and *R*ecruitment), incorporating several categories of issues for consideration. Combined with the reflections of the researcher and published experiences of others, suggested actions to minimize any potential impacts of issues which could affect interactions are presented to assist others who are contemplating this method of data collection.

Keywords

online focus groups, audiovisual technology, researchers, practitioners

Introduction

Focus groups, by their nature, are a collective activity (Kitzinger, 1994), used by researchers to bring together purposefully selected individuals to gather data in a group setting (Gothberg et al., 2013). Their hallmark is the use of interaction between participants to produce data and insights that might not be accessible without this interaction (Morgan, 2019). When using focus groups to conduct research, population sampling of participants is advocated to avoid selection bias and optimize external validity (Krueger, 1994). The ability to convene focus groups composed of participants from a range of locations is, however, an issue often faced by researchers (Flynn, Albrecht, & Scott, 2018), compounded by resource restrictions and the ability or willingness of participants to travel. As a result, researchers may make methodological compromises in relation to sampling which can result in trade-offs that could affect data richness (Flynn et al., 2018; Krueger, 1993).

Technological advancements now available to researchers can remove restrictions imposed by geographical barriers. This makes it possible for focus groups to be comprised of

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participants deemed most appropriate to address the research question and thereby enhance the rigor of a qualitative study. When geographical restrictions are removed, theoretical and purposive approaches to sampling become more feasible as opposed to convenience sampling based on who is accessible (Morse, 2015). Similarly, the feasibility for phenomena variation may be enhanced through the heterogeneity of the people and contexts included in the sample (Higginbottom, 2004). Access to broader geography can also enable sampling sizes to be increased, potentially giving greater depth and variation to the data collected (Morse, 2015). Therefore, online options which remove geographical limitations could provide more opportunity to recruit an adequate and appropriate sample to add rigor to a study, providing an option to obtain data from the fullest range of participants (Higginbottom, 2004) and enhance validity by enabling a richer data set to be realized (Morse, 2015).

The accessibility of free software, availability of stable and fast Internet connections (Abrams, Wang, Song, & Galindo-Gonzalez, 2015), and the integration of webcams into personal computers and mobile devices, which are now common place, means audiovisual focus groups conducted via the Internet are a very feasible option for qualitative researchers. Although published examples of such an approach in health-care research and wider disciplines are becoming available, the literature base that explores the use of audiovisual technology to conduct synchronous online focus groups is still in its infancy. The first study empirically examining the quality of data produced from focus groups conducted using online audiovisual technology was published just 4 years ago (Abrams et al., 2015). Studies comparing factors such as costs, recruitment, and participant logistics (Rupert, Poehlman, Hayes, Ray, & Moultrie, 2017) or evaluating participant experience (Matthews, Baird, & Duchesne, 2018) are sparse and have only began to emerge recently. Publications that describe the experiences of those who have used audiovisual software to conduct online synchronous focus groups dominate providing useful guidance from the lessons learnt to assist the novice researcher. It therefore cannot yet be established whether conducting focus groups in this way can truly mirror face-to-face discussions in achieving the authentic interaction necessary to generate the data required.

Although the use of an online audiovisual environment is perceived to closely align with the face-to-face environment (Matthews et al., 2018), some think the virtual nature hampers the ability to capture the essence of a focus group in relation to interactions and group dynamics (Greenbaum, 2008). Matthews, Baird, and Duchesne's (2018) evaluation of audiovisual focus groups with nine health-care professionals found that all felt easily able to express their ideas during the discussion and felt comfortable in the online environment with others previously unknown to them. However, just over half felt conversation was more difficult or flowed less easily than in a face-to-face environment. Studies that made direct comparisons between the quality of data generated face-to-face with that generated online had favorable outcomes in terms of very few differences in the richness of data collected (Abrams et al., 2015; Flynn et al., 2018; Kite & Phongsavan, 2017).

Although literature in this field is sparse with little data from which to draw practice-informing evidence (Morgan, 2019), the comparisons which have been made by others gave us confidence that using this approach to optimize the diversity of our sample would not impinge the richness of our data. Theoretical perspectives from textbooks (Morgan, 2019; Morgan & Lobe, 2011) and reflexive accounts (Kite & Phongsavan, 2017; Strout, DiFazio, & Vessey, 2017; Collard & Van Teijlingen, 2016; Tuttas, 2015) allowed us to benefit from lessons learned by others in our planning. These examples alerted us to procedural factors unique to conducting focus groups in an online environment which could pose a threat to the generation of rich data (Strout et al., 2017) by limiting interactions, the very hallmark of focus groups, and essential to achieving our research aim. As advocated in qualitative research, we used a journal as a reflexive tool. Doing so enabled us to identify issues that had the potential to impact on methodological and ethical aspects of this study. Although these issues are similar to those encountered in conducting face-to-face focus groups, they require consideration and actions unique to an online context. Due to the fundamental importance of interaction to focus groups, researchers must create an environment that encourages participation and interaction. We noted during our data collection that the nature of an online environment had the potential to produce detached statements from participants as opposed to interactive exchanges and so recognized the importance of strategies to promote interaction. Analysis of our experience presented here highlights procedural aspects that should be considered when planning synchronous focus groups using audiovisual software to optimize the ability of this method to capture data through interactions which can methodologically be aligned as closely as possible to face-to-face alternatives.

Research Design and Method

This article draws on reflections from Phase 1 of a mixed methods study that received ethical approval from the Nursing and Health Science Filter and Ethics committee at Ulster University. The aim of the study was to explore the concept and culture of researcher practitioner engagement in the context of health-care research. This was achieved through a hybrid model of concept development (Schwartz-Barcott & Kim, 2000). During the theoretical phase, we analyzed the attributes, antecedents, and consequences of the concept of "researcher practitioner engagement" from definitions and published incidences of the phenomenon. A subsequent fieldwork stage was carried out to refine the concept through the experiential knowledge of two groups: academic researchers based in Higher Education Institutions (HEIs) in the United Kingdom (UK) who had engaged nurses, midwives, or therapists in their research in a role other than as a study participant and frontline practitioners from these disciplines working in health-care settings in the UK who had been engaged in research by academic researchers in a role other than as a study participant. Focus groups conducted via the

Internet were chosen as the most appropriate method of data collection for this fieldwork phase. This optimized our reach across the UK by enabling us to include a geographical spread of participants while also offering flexibility to practitioners with varying work patterns and clinical workloads.

Selecting the Technology

Several different software options are available to conduct online focus groups, and it is important that these are evaluated according to the practical, methodological, and ethical requirements of the research. In our study, we required software that enabled reliable and secure real-time audio and visual communication in a private online space: a facility to record both audio and visual components, a platform that demanded low levels of user competency, and no financial commitment from participants to purchase or download software. We used Tuttas's (2015) evaluation of the software available at the time of her study, a web-based search for any additional products and consultation with a technology specialist. Two potential options were identified but one was dismissed as during a trial within the research team, its stability and reliability to host a group discussion was questioned. The software chosen to carry out focus groups online was Zoom© (Version 4.5.6). This platform hosts online audiovisual meetings; it has the capacity to show multiple users on screen, record audio and visual communications, and can be used from mobile devices. Features include sharing a screen to display presentations and a whiteboard facility. Software is free to all users up to a maximum of 45 min per meeting. As we anticipated focus groups lasting a minimum of 60 min, we chose to pay a small monthly charge payable only by the meeting host. Usability of the software was evaluated as part of a pilot focus group with five PhD researchers from the Institute of Nursing and Health Research at Ulster University. The lead researcher (N.D.) reflected on facilitating the group online and obtained participants' perspectives via an online questionnaire. Favorable feedback was received from four participants who commented on their experience of the online element of the group, with three specifically highlighting ease of use of the selected software. Another commented that any more than five participants in the group might have restricted the ability to hear everyone's views.

Study Participants

Using a purposeful sampling framework, a range of recruitment strategies were adopted to bring our study to the attention of potential participants including targeted e-mails to health-care researchers in all HEIs in the UK, advertisements in professional publications available to members of professional bodies to access health-care professionals, and a strategic social media campaign to reach both groups. A participant information sheet (PIS) included detail on the purpose of the study, what participation involved and outlined how all ethical considerations had been addressed. Volunteers were asked to complete a brief online recruitment questionnaire via Qualtrics® (Version Sept. 2018) that indicated their willingness and eligibility to take part. Recruitment was ongoing; each focus group was arranged when an adequate number of eligible volunteers were available, and a Doodle poll circulated to identify availability over a range of identified dates and times. Focus groups were planned based on availability of the majority in each round; those who were not available were included in the next Doodle poll. An e-mail was sent to participants one week prior to the focus group which included an informed consent form (to be signed and returned prior to the focus group), a weblink to join the online group, and an offer to take part in a test call for those unfamiliar with the software or who wished to test their hardware.

In total, 40 academic researchers and 20 frontline practitioners completed the online recruitment questionnaire. Of those academic researchers who met the study criteria, 10 did not indicate their availability via the Doodle poll. Five were "lost"; two were not available on any of the suggested dates, two registered to take part in a focus group but did not log in to the online meeting during the allocated timeslot, and one cancelled due to sickness shortly before the focus group commenced. Of six eligible practitioners who were invited to take part in a focus group but did not participate, five did not respond to invitations to complete a Doodle poll, and one was not available on allocated dates. Over a 4-month period, 17 academic researchers took part in five focus groups (Table 1), and 8 practitioners took part in three focus groups. Each focus group lasted on average 83 min. This included time for introductions, setting ground rules and a prerecorded PowerPoint presentation that lasted four min to outline the background and methodological approach of the study. Zoom© software enabled PowerPoint slides to be visible to all participants throughout the focus group using the "share my screen" facility to provide a visual display of each discussion point.

To provide transparency and contribute to the credibility of our overall study (Shenton, 2004), the lead researcher (N.D.) documented reflective commentary in a journal from the outset. This facilitated reflexive evaluation of the effectiveness of the chosen method and was used to record researcher observations, opinions, critical reflections, and notes on theoretical reading. Journal entries included:

- recommendations made by authors who reported lessons learnt when conducting focus groups online;
- factual information about each focus group including timings and any occurrences during the group (e.g., technical issues);
- observations on factors which facilitated the group conduct;
- reflexive evaluation of the effectiveness of the method in collecting the data necessary to achieve study objectives; and
- improvements to enhance subsequent groups and reflections on any changes made.

Additional reflexive entries were made to the journal during transcription of each focus group and data analysis as were

Table 1. Characteristics of Focus Groups and Participants.

Focus Group	*N*	Length (min)	UK Region		Role
Academic researchers (*n* = 17)					
R1	4	75	England (*n* = 2)	Academic role	Professor (*n* = 2)
			Scotland (*n* = 1)		Lecturer (*n* = 1)
			N. Ireland (*n* = 1)		Research fellow (*n* = 1)
				Clinical area	Nursing (*n* = 2)
					Physiotherapy (*n* = 1)
					Occupational therapy (*n* = 1)
R2	4	93	England (*n* = 4)	Academic role	Professor (*n* = 4)
				Clinical area	Podiatry (*n* = 1)
					Speech and language therapy (*n* = 1)
					Occupational therapy (*n* = 1)
					Nursing (*n* = 1)
R3	3	89	England (*n* = 3)	Academic role	Professor (*n* = 1)
					Associate professor (*n* = 1)
					Lecturer (*n* = 1)
				Clinical area	Nursing (*n* = 2)
					Unknown (*n* = 1)
R4	2	86	England (*n* = 2)	Academic role	Professor (*n* = 1)
					Doctoral researcher (*n* = 1)
				Clinical area	Nursing (*n* = 1)
					Speech and language therapy (*n* = 1)
R5	4	59	England (*n*=1)	Academic role	Professor (*n* = 1)
			Scotland (*n*=2)		Reader (*n* = 2)
			N. Ireland (*n* = 1)		Lecturer (*n* = 1)
				Clinical area	Midwifery (*n* = 1)
					Physiotherapy (*n* = 1)
					Occupational therapy (*n* = 1)
					Nursing (*n* = 1)
Frontline practitioners (*n* = 8)					
P1	3	87	England (*n* = 3)	Physiotherapist (*n* = 1)	
				Occupational therapist (*n* = 1)	
				Speech and language therapist (*n* = 1)	
P2	2	86	England (*n* = 1)	Occupational therapist (*n* = 2)	
			Wales (*n* = 1)		
P3	3	90	Scotland (*n* = 1)	Physiotherapist (*n* = 1)	
			England (*n* = 2)	Occupational therapist (*n* = 1)	
				Speech and language therapist (*n* = 1)	

reflexive discussions among the research team and advice sought from an academic colleague highly experienced in focus group planning and conduct. This was an iterative process; where an issue had been identified, reflexive notes were made following subsequent groups on the effect of any action taken to address this issue and literature returned to in order to identify potential solutions where others had noted similar issues. Once data analysis was completed, all journal entries relating to the focus groups were collated. Content analysis was used to identify the unpredicted issues experienced during the conduct of the focus groups, which the researcher, using intuition and tacit knowledge, reasoned had the potential to affect the data generated during this study. Reflective notes were coded by highlighting each section of text that indicated issues that had been identified as having a potential impact on the study, actions taken to address any issues that arose and reflections on action that could have been taken. Once all codes were developed, these were grouped into those that addressed similar issues and a representative name given to each category. As shown in Table 2, categories were grouped into five themes (*S*tability of group numbers, *T*echnology, *E*nvironment, *E*valuation, and *R*ecruitment). For each category, the actions that the researcher took, or identified through reflections or consultation of theoretical readings that could have addressed these issues, were noted (Table 2). To ensure further credibility, themes, categories, and suggested actions were reviewed by an academic colleague outside of the research team who is highly experienced in focus group methods. Presented below is a summary of these reflections including key points to consider when preparing to use online focus groups in research.

Theme 1: Stability of Group Numbers

Events that occurred during some focus groups impacted on the stability and consistency of participant numbers. In group R2, one participant joined after discussions began; having initially

Table 2. Summary of Issues and Potential Actions.

Themes	Actions for Consideration
1. Stability of group numbers	
(a) Late arrival of participants	
Issues to consider • changes to group interactions • richness of data collected when group membership changes • participant retention in the study if late arrival results in group expulsion • feasibility of group if minimum participant numbers not achieved	• analyze any potential impact of late arrivals in relation to the study topic and participant characteristics • assess appropriateness and necessity of software features such as locking a meeting to prevent late arrivals or disruptions • devise a strategy to manage late arrivals • manage participant expectation by communicating late arrival management strategy prior to focus group
(b) Early leavers	
Issues to consider • changes to group interactions • richness of data collected when group membership changes	• adequate time allocated to focus group • clear communication to participants on minimum expected time commitment • additional data collection methods to extend focus group (e.g., asynchronous chat room)
(c) Unexpected “no-shows” and/or late cancellations	
Issues to consider • alienation of those in attendance if group must be rescheduled due to inadequate numbers • challenges of rescheduling potentiality leading to lost participants	• direction via pre-focus group communication to manage expectations should this situation arise • identify strategies to prevent “no-shows” such as reminders • establish minimum participant requirements with overrecruitment to allow for no-shows or dropouts
2. Technology	
(a) Participants joining with audio only	
Issues to consider • lost participant if decision taken to discontinue participant when no video available • potential changes to group interactions and richness of data • unable to observe nonverbal communications	• add statement to informed consent form and/or recruitment questionnaire to establish equipment available to participants • maintain consistency by allocating participants to specific focus groups based on technology available to them
(b) Technical support for participants	
Issues to consider • effect on recruitment if environment in which participant joins focus group is limited to where technical support can be provided • participant’s ability and/or willingness to take part if they perceive themselves to have low self-efficacy with equipment • researcher’s familiarity with software and ability to trouble shoot	• pilot testing to identify potential technical issues • develop ability to trouble shoot by acquiring self-efficacy in using selected software prior to formal data collection • availability of more than one researcher during focus groups (one facilitator, one trouble shooter) • offer test calls for those who are inexperienced or lack confidence using the selected technology
(c) Optimizing use of software features	
Issues to consider • optimize interactions amongst participants • enhance participant experience	• ensure familiarity with all software features that can enhance interaction such as screen displays, raise hand, and accessibility features • pilot testing • take part in a group as a member to experience participation and reflect on areas for consideration for study participants

(continued)

Table 2. (continued)

Themes	Actions for Consideration
3. Environment from which participants take part	
(a) Distractions within the participant's environment	
Issues to consider • can disrupt group dynamics and hence data collected • distractions caused to group members on hearing others speak in the background • quality of audio recording	• alert participants to specific unacceptable distractions via ground rules, e.g., avoid use of mobile phones and checking emails • request participants use mute function on microphone should background noise occur within their environment
(b) Contravening ethical processes	
Issues to consider • participant taking part from a space which threatens anonymity and/or confidentiality beyond focus group members	• devise strategy for addressing a situation when it becomes evident that participant is in an environment which contravenes ethical procedures (both at the beginning of the group and during the group) • clear communication in pre-focus group information on process that will be employed should participant contravene ethical processes • encourage participants to use strategies such as marking a space with a "do not disturb" sign
(c) Participant comfort	
Issues to consider • allows participation in a comfortable environment • rapport with researcher	• offer a range of flexible times to allow for environment of choice • test call to develop rapport prior to focus group
4. Evaluation	
(a) Limited evidence of effect on data of audiovisual online as opposed to face to face data collection	
Issues to consider • credibility of data collected if factors which could facilitate or hinder interaction when using audiovisual technology to conduct focus groups are unknown or not planned for • unknown effect on data by conducting focus groups online as opposed to face-to-face	• reflexive evaluation of the method by research team during planning, conduct and analysis of focus groups • pilot testing • adopt an iterative approach to focus group conduct using feedback from participants and researcher reflexivity • build into the study design evaluation of participant experience to identify strengths and limitations to assist with design of future studies • comparisons of data collection using face-to-face groups versus audiovisual focus groups (methodological triangulation)
5. Recruitment	
(a) Participant alienation	
Issues to consider • exclusion of potential participants who do not have access to suitable equipment • exclusion of those unable to secure a private environment to adhere to ethical requirements of confidentiality and anonymity • exclusion of those who are inexperienced or lack confidence in the use of the required software and/or hardware • selection bias	• within recruitment questionnaire, ask potential participants to identify any factors which may restrict participation • identify if and how research team can address any factors which might limit participation, e.g., training • consider offering alternative formats to prevent participant alienation

decided not to proceed with the group due to technical difficulties, the participant later established connection and joined the discussion 20 min in. As this situation could change the group dynamic, it has been suggested by others that a participant who joins online more than 10 min after discussions commence should be reallocated to a future group (Wilkerson, Iantaffi, Grey, Bockting, & Rosser, 2014). However, it is difficult to establish whether and how this issue could change the data (Gothberg et al., 2013). At that time, it was reasoned that the dynamic was more likely to be affected by pausing discussions to remove the participant. There was also concern that this participant could be "lost" should they not be able to join a future group. Although expulsion based on technical issues feels punitive, it clarified to us that the consequences of "late arrival" should be clearly outlined to participants in pre-focus group communications to avoid this situation occurring. We subsequently identified a software feature to lock a meeting at a point determined by the facilitator and so by communicating a time limit prior to the group can prevent any difficulties this situation could raise.

Similarly, one participant left focus group R1 early. The timing of this group had been underestimated at 60 min and so changes were made when communicating the time expectation to future groups. Despite requesting a diary slot of 90 min, a participant left early in each of the two subsequent groups (focus groups R2 and R3). Diary demands of professionals are understandable, but it may be that the nature of the Internet makes leaving a group easier than in a face-to-face space. The result is reduced contribution from these participants during the latter stages of the discussion and potentially lost data. In recognition of the challenges faced in freeing up time to take part in such studies, others have set up asynchronous chat rooms to enable ongoing contributions post-focus group (Matthews et al., 2018); this strategy can overcome time limitations, the issue of early leavers and accommodate reflective thinkers. To facilitate the additional benefit of an anonymous contribution that may have been prohibited by the audiovisual environment, all participants were initially offered the option to provide further comment on any element of the discussion via follow-up e-mail. On realization of the impact and likelihood of early leavers and the limitation of emails in allowing further interactive discussions, we subsequently set up an online chat room via Chatzy©. Others who adopted this strategy had minimal uptake (Matthews et al., 2018); similarly, we received no follow-up e-mails or contributions to the chat room discussion. As Matthews et al. (2018) surmise, this could suggest that all discussion took place during the focus group with participants feeling they have no more to add or it could be reflective of professionals' busy schedules and, therefore, limited time to offer further contributions. However, this strategy should be used cautiously; although offering opportunity for additional participant input, it should perhaps be considered separate to focus group data if not exposed to interactive dialogue if low numbers partake or no interaction between members is noted.

Virtual groups have been shown to have higher cancellation, no-show, and attrition rates than face-to-face groups (Matthews et al., 2018; Rupert et al., 2017) with studies providing examples where online participants were more likely to withdraw, both prior to the start and during the group (Kite & Phongsavan, 2017; Tuttas, 2015). This too was our experience; three participants were confirmed to take part in focus group R4, and following the advice of others (Matthews et al., 2018; Strout et al., 2017; Tuttas, 2015; Wilkerson et al., 2014), attempts were made to identify at least one further participant to allow for potential dropout; however, due to limited availability of volunteers, this was not possible. One of these three participants failed to log into the discussion and was not able to contact the research team until hours later to advise of their change of circumstance. We made an "on the spot" decision to continue with the discussion as opposed to cancelling or rearranging the group as we were unaware whether the third participant would join in in due course. The resulting discussion would be considered a dyadic interview as opposed to a focus group (Morgan, Ataie, Carder, & Hoffman, 2013); this highlights the need to consider the minimum number required to form a focus group, the importance of adequate numbers to accommodate for at least one dropout and transparency in pre-focus group information on the action that will be taken should the minimum number not attend. If a focus group does not happen because not enough people turn up, this is more of an issue than if one person does not turn up for an individual interview (Morgan, 2019). The risks are alienation of those participants who were available and the challenges of rescheduling future groups, both of which could result in further withdrawal. However, the advantage of the online environment is that although inconvenient, it is surmised that rescheduling is logistically easier than face-to-face groups. Although there are notable differences between dyadic interviews and focus groups, there are also similarities (Morgan, 2019). Our motivation for using focus groups to meet the objectives of this study was to allow interaction that would facilitate sharing and comparisons based on potentially differing experiences from a range of contexts. This dyadic interview enabled us to achieve this and possibly obtaining greater depth of dialogue from these two participants during a discussion as it lasted longer than two groups with four members. Based on this, the decision was taken that should this situation arise again, a discussion with two participants could proceed as the advantages for retaining participants and the resulting data would not compromise the study. This decision also helped us to overcome the challenges we faced in convening small numbers of frontline practitioners and so prevented us from losing potential data. Focus group P2 therefore proceeded as a dyad when only two participants could be convened together. This however will not be an appropriate course of action for all studies, dependent on their nature. Researchers should be clear on the differences between dyadic interviews and focus groups and the influence of these different types of interactions to inform reasoning (Morgan et al., 2013).

Like others, we found small group sizes easier to manage online (Kite & Phongsavan, 2017). Even with low numbers we were required to extend the time allocated to each group from 60 to 90 min; small groups allowed for courteous turn taking and had larger numbers been present, we believe in-depth discussion would not have been possible in the time available to cover the focus group schedule. Features of audiovisual software such as a hand raising facility can be used in larger groups to facilitate turn taking, however, we found we did not need to avail of this tool and so are unable to offer insight into whether and how it potentially could facilitate or hinder interactions. Although more groups increased transcription time and costs, like Kite and Phongsavan (2017), we advocate for planning more online focus groups with fewer participants than when conducting face-to-face groups. The flexibility of the virtual nature of our focus groups allowed for this. Although smaller numbers were appropriate in this context, others may find it inhibitive (Matthews et al., 2018) depending on the nature of their study.

Theme 2: Technology

We took the decision to use online meeting software using audiovisual technology to closely mirror a face-to-face environment. Pre-focus group communication with participants clearly indicated that hardware with a microphone, camera, and Internet connection was required to take part. Despite this, two participants (one in focus group R3 and one in focus group P1) joined using a computer with no camera. The decision was taken to continue so as not to lose a group member from already small groups. Both participants could see the facilitator and other group members but were not visible to others; lack of a camera did not appear to have any negative influence on interactions as both were engaged with the discussion and engaged by others. However, depending on the participants, this could affect the dynamics within a group and prevents observation of nonverbal communications so is a further factor to consider in study design and assertions in pre-focus group communication. Researchers who feel such inconsistency could negatively impact group interactions could include a clear statement on consent forms for participants to confirm their access to the necessary equipment and understanding that they cannot take part in the group should they not have the correct technology to engage both audio and visually. Equally, decisions should be made to account for those with cameras but who perhaps experience technical issues during discussions that cause interruption to visual communication, as can happen with varying Internet connections. This leads to our second potential challenge that stems from the likelihood that unforeseen technical interferences can occur in the conduct of online focus groups (Gothberg et al., 2013). In Chong, Alayli-Goebbels, Webel-Edgar, Muir, and Manson's (2015) study using webinar technology, for example, there was one participant with technical difficulties in each group. Other research teams have secured IT personnel to be available at both the facilitator and participants' venues to rectify any issues which might arise (Chong, Alayli-Goebbels, Webel-Edgar, Muir, & Manson, 2015; Flynn et al., 2018). Resource limitations prevented us from being able to offer such support; however, we experienced minimal technical issues that prevented participation. This could be attributed to our selection of software that we had established as requiring low levels of competency. We considered participants' self-efficacy in using the software an important factor as it could potentially impact on the quality of data collected (Abrams et al., 2015; Flynn et al., 2018). A further consideration is the infancy of this technology; although participants may have previous experience of participating in focus groups, doing so online may be a new experience and so may take time initially to familiarize with the process of interacting in this environment. This encouraged us to offer test calls to ensure participants felt confident and comfortable in using the technology prior to the focus group. Test calls were taken up by three participants; we found this had the additional benefit of enabling the researcher to introduce themselves to the participant and begin to develop a rapport. Equally, the facilitator took multiple opportunities to use this platform in other areas of their work both as a host and as a meeting attendee prior to the focus groups; this developed self-efficacy in using software features to optimize interaction and in supporting other users to troubleshoot. Participants also had the flexibility to join the group from the environment of their choice, which, as we discuss later, may have been a factor that contributed to their ability to participate. As some took part from their home environment, removing choice by restricting their participation to an environment where IT support was available could have contributed to nonparticipation.

Theme 3: Environment From Which Participants Take Part

Unlike face-to-face groups, researchers have limited control of the participant's environment as it is self-selected (Chong et al., 2015). Carrying out focus groups online can, therefore, result in issues that the researcher cannot mitigate against. Examples include distractions caused by disruption by colleagues entering the room or use of the Internet such as checking e-mails (Chong et al., 2015). We experienced similar issues during this study; participants in all academic researcher focus groups (R1, R2, R3, R4, and R5) took part in the focus groups from their desk, either at home or in the workplace. Although creating a comfortable environment for participants (Flynn et al., 2018), some were observed distracted by activities on their desk, computer, and mobile phone while other members of the focus group were speaking. There were examples of participants being interrupted by colleagues or family members entering the room and on occasion, disappearing from the screen to attend to these discussions. This raises additional privacy considerations that are unique to an Internet-based study as opposed to traditional face-to-face spaces (Chong et al., 2015). From a practical perspective, others entering a room can create noise distractions and interfere with audio recording. One participant overcame this by muting their sound to prevent interference from background noise. Other researchers have suggested actively encouraging participants to mute when not speaking (Kite & Phongsavan, 2017; Tuttas, 2015). In the main, we found that this was not necessary and potentially could have resulted in disjointed discussions. Participants could be encouraged to wear a headset with a microphone (Kite & Phongsavan, 2017); however, this equipment may not be available. One participant in focus group R4 wore headphones without a microphone; although this maintained privacy for others in the group should anyone have entered the room, it prevented the headphone wearer from being aware of a background conversation that was picked up by the computer microphone and which distorted the recording.

From an ethical perspective, the environment raises issues around both anonymity and confidentiality. We asked participants to confirm they were able to take part where they could ensure confidentiality would be respected for both themselves and the other members of the group. In instances where this did not occur, it did not become evident until later in the discussions when interruptions were made. Other participants did not express concern to the facilitator during the focus groups in which this occurred, possibly due to the lack of sensitive discussions. Given the nature of the participants involved and the environment from which they join the group, particularly if within working hours, interruptions such as these may be unavoidable. However, these situations have the potential to breach confidentiality. As with focus groups carried out in face-to-face spaces, it is only the researcher who can guarantee that confidentiality will be respected and cannot guarantee the actions of other focus group members. Online spaces, however, allow for others outside of the focus group membership to be in the vicinity of the discussions without the researchers' or other focus group members' knowledge. This is a situation for which researchers should consider a clear plan of action to mitigate. Although the need for a confidential space was reinforced in the PIS, this may need to be restated on the informed consent form and when setting the ground rules at the beginning of the focus groups. Also, practical elements may need to be explicitly addressed in any communications with participants as these may not be issues they have considered prior to taking part. Facilitators must be clear on what action they will take should participants indicate that they are not in a suitable environment at the beginning of the focus group. Consideration should be given to the impact on group numbers should withdrawal be forced at this stage and how to deal with withdrawal mid-group should it become evident during discussions that confidentiality has been compromised.

Theme 4: Evaluation

Use of the Internet to conduct audiovisual focus groups has been evaluated from the participants' perspective (Matthews et al., 2018), but little is published in this regard. We did not incorporate an evaluative element into our study protocol and therefore were reliant on our own reflexivity to appraise this process. Use of a reflective journal throughout helped us to adopt an iterative approach by controlling for the unpredicted issues in subsequent groups. What remains unknown is the experience of the participant as a member of our Internet-based focus groups or what the outcome of the study would have been had it been feasible to convene these same participants in a face-to-face group. Considering the very limited evidence base and sparse reporting relating to this novel method (Morgan, 2019), others planning to carry out Internet-based focus groups using audiovisual software should consider building an evaluative component into the study design to share with others and strengthen the design of future studies. In addition, offering participants the option to take part in an online or face-to-face group provides opportunity to compare the depth and breadth of interactions between the two formats within one study (Kite & Phongsavan, 2017).

Theme 5: Recruitment

During the recruitment phase, no potential participant contacted us to indicate that they could not take part because they did not have access to the necessary equipment or a private environment. We recognize, however, that specific requirements to enable participation in an online meeting may have negatively impinged on recruitment. Recruiting from two different professional groups, academic researchers and health-care practitioners, gave us the opportunity to reflect on factors that may have caused a difference in the ease by which we were able to recruit from one group over the other. Data collection for academic researchers was completed well in advance of their practitioner counterparts; academic participants took part from their desks during the working day in an office environment or had the opportunity to work from home. Anecdotally, they told us that they had extensive experience of online meetings and student tutorials using audiovisual technology, and the majority had used the Zoom© software package previously. Conversely, health-care professionals work shifts, have busy clinical workloads, and may be restricted by lack of access to the required equipment in a confidential space during their working day. We acknowledged the challenges of practitioner recruitment when designing our study (Hysong et al., 2013) and had reasoned that the flexibility of an Internet-based option could enhance the recruitment process. Accessibility to fit in with working schedule was rated highly in evaluation of one online study (Matthews et al., 2018). Telephone-based focus groups were preferred over face-to-face by 59.4% of participants as an alternative tool to involve health professionals who might otherwise be inaccessible (Ross, Stroud, Rose, & Jorgensen, 2006). In 2018, when our recruitment took place, 95% of adults aged 25–54 years owned a smartphone (Statista, 2018), which offers a personal device that should support participation, both audio and visual. This, however, relied on willingness of practitioner participants to take part outside of working hours if time or a private environment within which to use personal smartphone technology was not feasible during the working day. What is unknown to us is the impact that factors such as the need for a confidential environment, restricted access to the necessary hardware, and self-efficacy in using such technology had on ability or willingness to participate. Offering an alternative method of participation, so as not to alienate those who without the equipment, perceived skills, or confidence to participate could be considered to prevent sampling bias within a study. Researchers also need to be able to teach participants how to use these tools (Wilkerson et al., 2014); we offered test calls but perhaps could have been more forthcoming in identifying the need for and offering training support, as ownership of a mobile device such as a tablet or smartphone does not mean confidence in using the technology we proposed. Although an option would have been to use our recruitment survey to ask potential participants if they required any support to enable them to participate, funding limitations would have prevented us from being able to meet any resource need indicated, such as provision of a tablet or on-site technical support.

Conclusion

This was our first experience of carrying out synchronous focus groups using the Internet. Our choice of method provided us with the opportunity to include participants from across the UK resulting in a diverse sample that we believe has added richness to the data collected. We also believe the flexibility of the medium offered encouraged participation. As researchers with experience of conducting face-to-face focus groups, we are aware that many of the methodological, practical, and ethical considerations of focus groups carried out using the Internet are similar to those which must be considered in a face-to-face venue. However, as novices of this online method, we have learnt several lessons on important factors that should be considered to overcome the methodological challenges that working in an online context can raise and to enable authentic interactions. Situations arise that are unique to online environments and are as not as easy to handle or plan for as they would be in a face-to-face space as control is given to participants, for example, in respect of their environment. Researchers, therefore, need to have clear plans of action and anticipate every eventuality to optimize participant experience, while ensuring data are collected robustly and in adherence to ethical approvals. Making use of tools such as ground rules, pre-focus group information, and informed consent documents can help to mitigate against potential issues that may arise by ensuring participants are well appraised of the process, expectations, and any action that could be taken in the event of situations arising. Although we do not offer empirical evaluation, our reflexive learning can help others to anticipate challenges specific to their study context to optimize participant experience and opportunities for authentic interaction that generates data in online focus groups as close to that which can be generated in a face-to-face environment. Further methodological evaluations are now required to continue to develop the evidence base for this approach by further exploring the impact of Internet-based focus groups on interactions, willingness to engage, and the richness of the data collected.

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3.5 Phase 2: Quantitative Phase (Objective 3)

As outlined at the beginning of the thesis, this work was initiated by a desire to explore further if and how academic researchers engage frontline practitioners in their research endeavours, motivated by recurring advocacy within the literature that doing so can increase the relevance and utility of a study. Preliminary data obtained through a scoping review and analysis of these data in light of the study's theoretical framework, highlighted a conceptual gap through identification of a type of engagement that it was reasoned had not been labelled or defined. This led to objectives 1 and 2 of this study, which were achieved in Phase 1 through development of the concept of 'Researcher Practitioner Engagement' in the context of nursing, midwifery and therapy research. Using a qualitative approach, the attributes, antecedents and consequences of this concept were established and used to devise a tentative definition and inform the basic tenets of a proposed conceptual model of 'Researcher Practitioner Engagement' (section 4.5). Once this was achieved, the study moved to investigate the presence of the concept components of 'Researcher Practitioner Engagement' in healthcare research in the United Kingdom (objective 3) using the elements of the proposed conceptual model to structure and guide this subsequent phase. During this second quantitative phase, academic health researchers and practitioners with experience of engagement were surveyed using an online tool. In this section, the stage between Phase 1 and Phase 2 in which the procedures and tool used to collect Phase 2 data were designed is detailed. This is followed by an outline of the procedures used to test the data collection tool before the findings of Phase 2 are then presented.

3.5.1 Purpose of Phase 2

The objective, to investigate the extent of the presence of the concept components of RPE, was achieved by establishing if each of the concept components, as detailed in the conceptual model, were experienced by those who had engaged practitioners in their research endeavours and, if so, to what extent. It was not the intention to make correlations between attributes and consequences at this stage. As is commonly the case in exploratory sequential mixed methods studies (Creswell and Clark 2011; Bryman 2006), qualitative data from Phase 1 were used to inform the design of the processes to collect quantitative data in Phase 2. This happened in two ways; qualitative data were used to generate a survey instrument thus building on Phase 1 to form the initial integration of qualitative and quantitative data within this mixed methods study (Fetters *et al.* 2013). Secondly, learning and insight from Phase 1 participants' contextual data helped to confirm the inclusion and exclusion criteria for Phase 2 recruitment, thereby enhancing the validity of the findings. Both aspects are considered in further detail below.

3.5.2 Survey data collection tool design (online questionnaire)

The fact that the design of Phase 1 was driven by the identification of a conceptual gap, meant that no tool existed which would measure this newly developed concept, necessitating a tailor-made tool that would enable the presence of the components of the concept of 'Researcher Practitioner Engagement' to be investigated. To investigate this across the United Kingdom, a tool which could be distributed via the internet was reasoned an effective approach to reach the target population, achieve sample variation and optimise response rate (Ball 2019). The online platform Qualtrics© (Qualtrics 2019) was chosen to design, administer and collate the survey responses using a bespoke questionnaire. As a license for this platform is held by Ulster University, the researcher had confidence in the ability of this software to comply with necessary data governance requirements. DeVellis's (2012) recommended steps to instrument development were used to guide the design process (Figure 3.3) along with advice offered and good practices observed in relation to methodological, ethical and practical considerations by those who have previously used an online questionnaire to collect data (Alessi and Martin 2010; Buchanan and Hvizdak 2009; Eysenbach and Wyatt 2002).

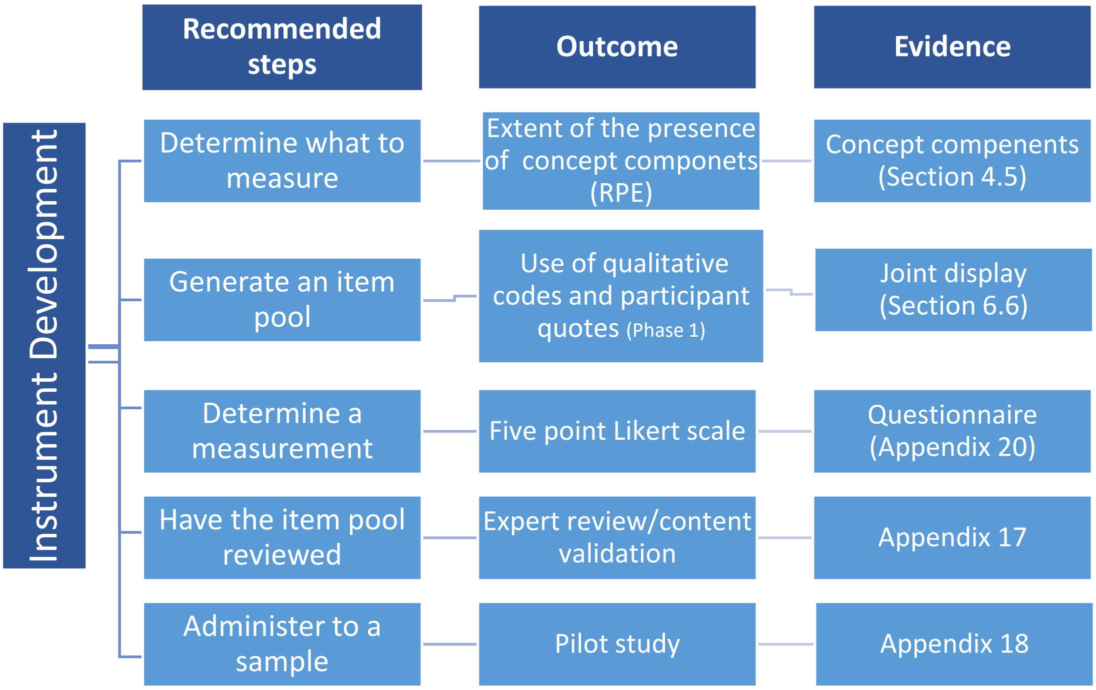


Figure 3.3: Overview of the use of DeVellis's Instrument Development Recommendations

3.5.2.1 Determining what to measure

This was shaped by the phenomenon of interest, Researcher Practitioner Engagement, and so forms the latent variable. As demonstrated in

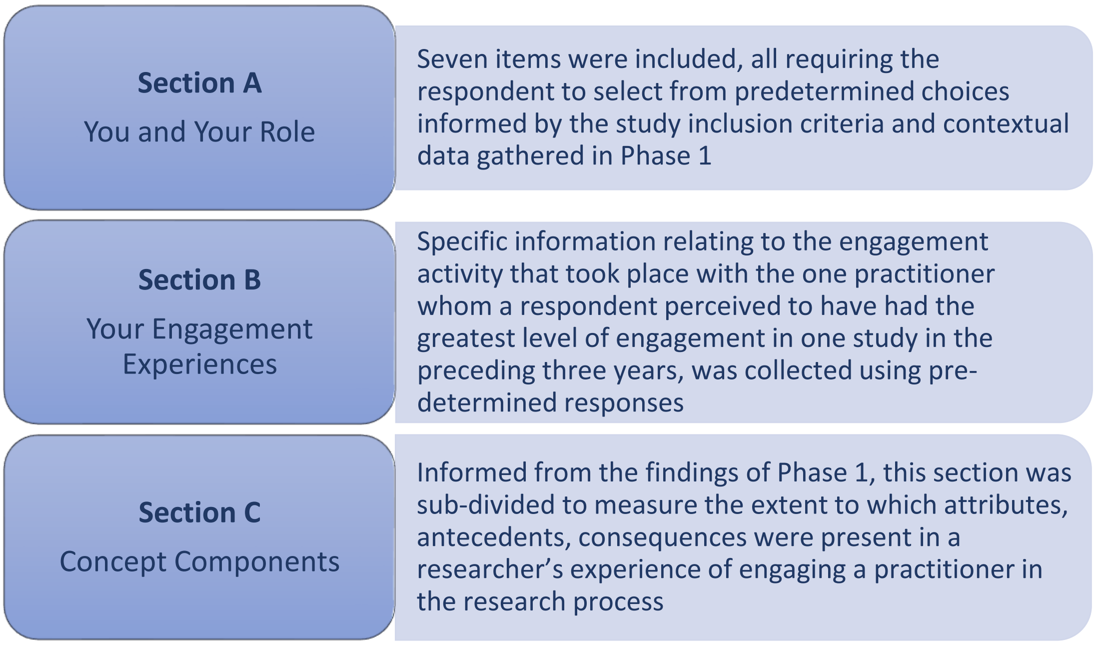
Phase 1, this concept is characterised by its attributes, antecedents and consequences. Each form a component of the concept and as such can be considered individually, allowing for specific analysis of each in order to explore the phenomenon as a whole.

3.5.2.2 Generating an item pool

In order to measure the presence of each concept component, questionnaire items must accurately represent each construct. The content of the questionnaire therefore mirrored each of the concept components. A joint display was used (Guetterman *et al.* 2015) to transparently demonstrate how qualitative findings informed each construct and tool items. Illustrative quotes are included within the joint display to show how these data were used to inform the wording of questionnaire items. Examples of joint display tables are provided in chapter six (section 6.6).

3.5.2.3 Determine a measurement

As shown in Figure 3.4, the tool was divided into three sections. The purpose of the first two sections of the questionnaire were to collect data which would provide information on the demographics of respondents (section A) and their engagement experiences (section B). A range of pre-determined responses, informed by the study inclusion criteria, the scoping review and the contextual data from Phase 1 were used to design pre-determined responses and collect nominal data. In designing the approach to measurement in section C, the purpose of the scale and how the data were intended to be analysed were considered (Joshi *et al.* 2015), alongside factors ensuring rigour in the data collection process, such as avoiding question bias (Ikart 2019). To meet the study objective of determining researchers' perceptions of the presence of each concept component, the main measurement used was dichotomous (Yes or No) and therefore nominal data were collected. Phrasing of each item was determined from the qualitative data derived from Phase 1. Practical functions within the questionnaire software were used to reduce participant burden and optimise response rate; a completion percentage bar, save and return to later option and a back button to review previous responses were added. Questions were also suitably formatted for mobile devices, so that for those who chose a mobile phone or tablet to complete the survey, formatting of the response options was not compromised and so posed no risk to the reliability of responses.



Section A You and Your Role	Seven items were included, all requiring the respondent to select from predetermined choices informed by the study inclusion criteria and contextual data gathered in Phase 1
Section B Your Engagement Experiences	Specific information relating to the engagement activity that took place with the one practitioner whom a respondent perceived to have had the greatest level of engagement in one study in the preceding three years, was collected using pre-determined responses
Section C Concept Components	Informed from the findings of Phase 1, this section was sub-divided to measure the extent to which attributes, antecedents, consequences were present in a researcher's experience of engaging a practitioner in the research process

Figure 3.4: The content of sections of the online questionnaire used to collect data in Phase 2

Incorporated into the design of the questionnaire were the following principles to contribute to validity:

- In order to optimise recall, the questionnaire for researchers was focused on one specific study which began no more than three years prior to the survey

- The study in which engagement took place was completed or near to completion
- Researchers were asked to complete questions with reference to one specific practitioner, with whom they felt they had/have the greatest level of engagement within the specified study
- Questions measured presence of concept components and were not contextually bound. An option was offered to provide open comments at the end of the questionnaire to allow respondents the option to add contextually specific data that may illuminate or expand on closed responses
- Where information provided in sections A and B indicated that the respondent did not meet the study criteria, this generated a polite termination notice to the potential participant and no further data were collected

3.5.2.4 Item pool reviewed by experts

A preliminary expert review was carried out by two members of the research team who had not taken an active role in the development of the survey instrument but who were familiar with the outcome of Phase 1. Expert review is an evaluation technique commonly used to pre-test a survey (Ikart 2019), which provided critical appraisal of the tool to improve quality prior to data collection. Both assessed face validity through evaluation of the overall presentation, design, flow and wording of each item. Two questions were removed as both reviewers deemed asking researchers to rate their perceptions of practitioners' experiences would not gather valid data. Grammatical and minor editing changes were made to enhance the presentation and user friendliness of the online questionnaire.

A detailed critical evaluation was then carried out by asking experts external to the research team to appraise the questionnaire content. The specific aims of this review were to establish:

- if questions were necessary and relevant
- accurate interpretation of the questions and the pre-determined responses as intended
- clarity of instructions and supporting documentation

A practitioner who had originally volunteered to participate in Phase 1 but was unable to attend any of the scheduled focus groups, in a research champion role, and five academic researchers, known to the research team, with known experience of Researcher Practitioner Engagement, across a range of roles were invited to carry out this expert review. Four accepted the invitation and completed the review in June 2019 (Professor (n=2), Lecturers (n=2). Content Validity Index (CVI) was used to quantify content validity of the questions (Polit and Beck 2006). Reviewers did not answer the questions in the survey but, in order to establish if items should be retained, eliminated or refined (Polit *et al.* 2007), reviewers were instructed to rate each question on a 4-point scale based on criteria by Davis (1992) to judge the relevance of each question and provide a content validity score:

1 = *not relevant*, 2 = *somewhat relevant*, 3 = *quite relevant*, 4 = *highly relevant*

Where a score of 1 (not relevant) or 2 (somewhat relevant) was given, the reviewer was prompted to justify this score in a comments box to advise if the question should be deleted or provide guidance on how the relevancy could be improved. A second box offered the reviewer an opportunity to comment on the clarity of the question and its predefined responses if they felt improvement was required. Each expert reviewer was provided with a comprehensive document which provided instructions on the review process (Appendix 17).

3.5.2.5. Consider validated items

All scores and comments were collated and reviewed. The researcher expert reviewers scored all questions 3 or 4 and provided additional feedback to enhance clarity of the questions and pre-determined responses. The practitioner expert reviewer scored five questions 1 or 2. Although reviewers were instructed that they were not required to respond to the actual questions as no data were to be collected, the practitioner did so, which assisted them to justify the challenges they were facing in responding to particular questions. Reviewers' comments were considered by the research team and necessary changes made. An overview of the main changes is provided in Appendix 17.

Overall, the outcome of the expert review and completion of the Content Validity Index with resultant amendments added to the rigour of the tool. The number of questions was reduced and response options within each question rationalised. The main amendment was the re-design of the measurement scale from dichotomous (Yes/No) (*presence of the concept component*) to Likert scales (*extent of the presence of the concept component*). Symmetrical Likert scales, offering a neutral option and equal opposing alternatives on either side were used to achieve this (Willits *et al.* 2016). Uniformity of scales was adopted across the questionnaire as best as possible to standardise responses, maintaining both consistency for the respondent and when analysing and reporting findings. This much briefer tool reduced participant burden and focussed on questions specific to the objective, thereby enhancing the tool's validity.

3.5.2.6 Administer to a sample (pilot testing)

Following changes made as a result of the expert review, the revised instrument was piloted with a convenience sample of academic researchers with known experience of Researcher Practitioner Engagement. Five were invited to take part, four of whom accepted this invitation. None had contributed to the expert review. The pilot sample were purposefully selected based on the knowledge that they met the study inclusion criteria. All were based in the research team’s own institution (n=4) and chosen to represent different academic positions (one professor, one research assistant, one lecturer and one full time PhD researcher) thus highlighting issues raised across different roles. Four practitioners who had volunteered to take part in Phase 1 but had not been able to take part in focus groups were also approached to pilot the survey. Three accepted this invitation.

The pilot test mirrored the intended main survey data collection process as closely as possible in order to fully assess all elements to minimise any issues being raised during the main data collection. Pilot participants were asked to complete all items. At the end of the questionnaire a comment box was provided to feedback on any aspects they had difficultly completing. The survey software recorded the completion time which was used to establish an average time to communicate to potential respondents on the main survey invitation. Survey responses were transferred to the statistical analysis software package Statistical Package for Social Sciences (SPSS©) Version 25 (IBM 2017), and the pilot data used to test the analysis process. The changes which resulted following pilot testing, based on feedback provided by pilot participants and the researcher’s reflections on the data analysis process, are listed in Appendix 18. The final tool used to collect data in Phase 2 can be viewed in Appendix 20. As minimal changes were made, and information provided by participants in sections A and B confirmed they met the study inclusion criteria, pilot data were retained and combined with the data from the main data collection.

3.5.3 Data collection

Although the target population for this phase of the study was the same as for Phase 1, Phase 1 data assisted in refining the inclusion criteria for Phase 2 by providing greater insight into contextual issues, and areas for exclusion that could threaten the validity of the data by including contexts outwith the focus of interest (Table 3.6). It was not possible to undertake a power calculation as the sampling frame for the target population of researchers who had engaged practitioners in their studies was not known. Therefore, the aim of the recruitment strategy was to optimise reach across the UK. The invitation to participate was sent to the list of research centre leads and academic contacts created in Phase 1 (n=395) with a request to cascade the invitation to colleagues with relevant experience. A recruitment advertisement was also circulated via Twitter from the University and School of Nursing Twitter account and the PhD researcher's professional account. The tag function was used to draw the attention of the survey to researchers via relevant Twitter accounts. The online questionnaire was distributed on 1st August 2019 and remained open until 7th October 2019. One email reminder was sent, and the advertisement was retweeted from the PhD researcher's professional twitter account weekly throughout this period.

Table 3.6 Inclusion and exclusion criteria for survey (Phase 2 Quantitative phase)

Inclusion criteria	
Survey 1: Academic Researchers	**Survey 2: Practitioners**
Health research studies carried out within the previous 3 years Based in academic institutions in the UK Engagement with nurse, midwife, occupational therapist, physiotherapist and/or speech and/or language therapist	Front line practitioners (nursing, midwifery, occupational therapy, physiotherapy, speech and language therapy) delivering care to service users in a health care context Experience of engagement in a health-related research study within the past 3 years
Exclusion criteria	
Researchers employed solely with an NHS organisation Based in a formal collaboration (E.g. CLAHRC)	Practitioners in a dedicated research role

3.5.4 Data analysis

Across all three sections of the questionnaire, descriptive statistical tests were used to establish the frequency of responses to each item. The demographics and engagement experiences (sections A and B respectively) of respondents were reported in tables and charts. The frequency (n=) of responses to each of the response options in section C allowed for reporting on the extent to which each concept component had been experienced and so identification of the most and least frequent experiences. Analysis of these data, together with data from sections A and B, allowed patterns to be observed in relation to current engagement practices by academic researchers based in UK Universities who engage practitioners in their research endeavours.

3.5.5 Ethical considerations

Ethical approval was obtained for both Phase 1 and 2 simultaneously (Appendix 13). A draft of the survey instrument was initially approved with a caveat that any major revisions would be resubmitted for further review. The committee was therefore appraised of the changes made following completion of Phase 1 using formal processes and approval received (Appendix 15). Although the same basic ethical tenets apply to internet-based research as to traditional research methods (Whitehead 2007), the nature of an online environment can challenge traditional approaches to ethical principles (Buchanan and Hvizdak 2009), therefore, specific risks which arise must be accounted for within a study design. Specifically, these relate to the process of obtaining informed consent, the storage of data and the security of data obtained via online platforms (Buchanan and Hvizdak 2009; Whitehead 2007). As in Phase 1, all ethical principles outlined by the HRA (2018) and which required consideration specific to this study were respected and communicated to potential participants in a Participant Information Sheet (Appendix 19), a link to which was embedded in the introductory section of the online questionnaire.

3.5.5.1 Informed consent

Invitations to take part, sent by email, included a covering message which provided a detailed overview of the study and what taking part would involve. The Twitter advertisement provided some but less in-depth covering information. All potential participants were directed to the Participant Information Sheet to view more detailed guidance. Although implied consent is common practice with all forms of surveys (Buchanan and Hvizdak 2009; Whitehead 2007), explicit consent was obtained by adding a statement at the end of the introductory section of the survey which read ‘Please read the

Participant Information Sheet and then click 'Continue' if you consent to taking part in this survey’. Procedures for withdrawal of data were clearly communicated to potential respondents should they have chosen to withdraw data up to the point at which data analysis was completed.

3.5.5.2 Protecting anonymity and confidentiality

Ensuring anonymity and confidentiality were adhered to was one of the key considerations in the selection of the software used to administer the electronic survey. There was no requirement to collect any personal data and so no details which could potentially identify a participant were requested. Participants were invited to complete the survey via a weblink circulated by email and Twitter. Although the chosen survey design software (Qualtrics© 2019) collects IP addresses by default, this function was disabled to assure anonymity. In section A of the online questionnaire, participants were asked to generate a unique identification code by responding to three brief questions. Participants were advised that the sole function of this unique identifier was to facilitate their right to withdraw up until the date the data analysis process had been completed. By contacting a named administrator within the Institute of Nursing and Health Research, Ulster University, those wishing to withdraw would be prompted to recall their unique identifier using these three questions. The identifier would then be given to the researcher who would withdraw the corresponding questionnaire, ensuring no identifying information was passed from the administrator to the research team.

At the end of the questionnaire, participants were directed to a separate link to provide an email address should they wish to be informed of subsequent research which emerges from this study and/or indicate willingness to complete a second questionnaire to establish test-retest reliability. The research team were not able to link this expression of interest to the participant's submitted survey. Email addresses provided were held confidentiality and securely in an Excel spreadsheet in line with GDPR (Information Commissioner's Office 2018) on password protected Ulster University IT systems and for the maximum time required for completion of the questionnaire. This information was clearly communicated to potential participants via the Participant Information Sheet (Appendix 19). No potential for distress was identified for those who agreed to participate in this study.

3.5.6 Reliability and validity

As outlined in previous sections, it was imperative that steps were taken during both the design of the data collection instrument and the procedures used to collect the data, to ensure findings of this phase were valid and reliable. As the items within the survey were informed by data from Phase 1 (Qualitative phase), the attention given to the robustness of this first phase will have had a positive effect on Phase 2 (section 3.5.6). The following additional steps were taken in the survey development:

3.5.6.1 Test-Retest

In the closing section of the survey, respondents were asked to indicate if they would be willing to complete a similar shorter version of the survey as part of the test-retest process. Those who were willing, were redirected to a second brief online survey in which they were asked to provide an email address for follow up purposes. To adhere to anonymity, the link to this survey was set up in such a way so as to ensure no cross referencing between surveys with email addresses and completed study surveys. Respondents were reassured of this both in the PIS and in the text when directed to the follow up survey. Those who indicated they were willing to complete a second survey were sent section C of the main survey four weeks after completion of the first survey. Questions were also included to generate their unique ID so both surveys could be reconciled. Four researchers and one practitioner indicated they would be willing to complete a second shorter survey for test retest purposes, however, just one respondent submitted a completed second survey when this was requested. Formal analysis of test-retest was therefore not pursed.

3.6 Integration of Phase 1 and 2 findings

As outlined in section 3.5.1, integration of the data from the qualitative and quantitative phases of this mixed methods study took place between phases 1 and 2 when the qualitative data were built on to design Phase 2. Further integration also took place once quantitative data were collected by merging the data from these phases (Creswell and Clark 2011); findings of Phase 2 were added to the joint display table and data from both phases merged (Fetters *et al.* 2013) to address objective 4, that is, to identify factors for further consideration in the development of the concept of ‘Researcher Practitioner Engagement’ for practice and future research. The use of the joint display assisted with visual representation of the integrated data and in the interpretation of these findings to address this final objective (Creswell and Clark 2018). Through this process of interpretation, inferences, or conclusions, were reasoned from the synthesised data (Teddlie and Tashakkori 2009) and narrative around this integration also presented to show divergences and convergences between the two sets of data and the further contribution which could be made to addressing Phase 1 objectives (objectives 1 & 2) (Creswell and Clark 2018). Joint displays and narrative integration are presented in chapter six of the thesis and interpretations presented in the discussion chapter (chapter seven). Quantitative findings complemented the qualitative findings of Phase 1 by showing relationships between the two sets of data (Ostlund *et al.* 2011) and, therefore, by integrating these findings, interpretations of patterns observed addressed objective 4 to identify areas for future consideration and development in relation to the concept of RPE.

3.7 Summary

This chapter has described in detail how the study was designed and conducted in order to address the objectives outlined at the end of chapter two. The pragmatic approach to research design offered freedom to diverge from and adapt research methods to ensure these objectives were addressed in the most appropriate and robust manner to, firstly, develop a proposed concept and, secondly, investigate its presence in a two-phase mixed methods study. The findings of each of the phases are presented in chapters four and five.

CHAPTER FOUR - FINDINGS PHASE 1 [QUALITATIVE]

4.1 Introduction

As detailed in chapter three, Phase 1 forms the qualitative component of this exploratory sequential mixed methods study. The objectives were firstly to fill an identified conceptual gap through development of the concept of ‘Researcher Practitioner Engagement’ and secondly to establish necessity for this concept in the context of nursing, midwifery and therapy research. The hybrid model of concept development (Schwartz-Barcott and Kim 2000) provided a framework to achieve this, through a theoretical phase, followed by a fieldwork phase and a final analytical phase. Findings from this concept development are reported both here and in *paper 3* (section 4.7), divided appropriately to limit cross reporting and with the information needs of the intended audiences of both formats taken into consideration. The predominant focus of *paper 3* is to report the findings of the fieldwork phase, providing a range of illustrative quotes to demonstrate the influence of this fieldwork data on the concept components which had been proposed from the theoretical phase, and the final outcome of the concept development. Within the thesis chapter, a brief overview of each phase is given, supported by Appendices which demonstrate more fully how the summarised formats in both *paper 3* and this chapter were arrived at.

4.2 Overview of theoretical phase

The sources from which data were extracted in this theoretical phase were 1) published instances of Researcher Practitioner Engagement and 2) definitions of related concepts. Ten instances of the observed phenomenon had been identified in the original scoping review. When the search strategy was reviewed, extended and repeated, only one further source of data was identified for analysis (Patterson *et al.* 2011). Patterson *et al.* (2011) did not report on engagement within a specific study but instead, carried out an investigation to establish how researchers can optimise recruitment. By drawing on the experiences of 19 researchers, their findings focussed on factors which could successfully overcome limitations placed when clinicians adopt gatekeeping roles. Relevance to the concept was reasoned as the key focus of engaging with practitioners in order to overcome what could be viewed as a hired hand approach was clear with intent to positively influence a study and its outcomes. Four additional sources of data were added; two definitions of stakeholder engagement (Concannon *et al.* 2014; Deverka *et al.* 2012), the findings of a UK based study carried out with stakeholders of healthcare improvement initiatives, including research, to establish defining components of engagement within this context (Norris *et al.* 2017) and the components of 'Practice Research Engagement' (PRE), a framework to guide varying levels of practitioner and researcher engagement (Brown *et al.* 2003; Brown *et al.* 2001), where practitioner is defined as any social actor who is a service provider. Following analysis, five attributes, five antecedents and three consequences were identified. Each of the identified components is listed below in Figure 4.1 in section 4.4. Findings of the theoretical phase are also summarised in Table 2 within *paper 3*.

4.3 Overview of fieldwork phase

A total of 34 academic researchers responded to the recruitment survey, 27 of whom met the study criteria. Of the seven who did not meet the criteria, three were based within formal organisational partnerships between a university and healthcare provider, two had no recent experience of engaging a practitioner in a study and two gave incomplete information in the recruitment survey to assess their suitability. Of the 27 researchers invited to take part, ten either did not respond to the Doodle Poll or were only available on dates which were not suitable for any other volunteers. Seventeen researchers therefore took part in this fieldwork phase.

Of the twenty practitioners who completed the recruitment survey, eleven met the study criteria. Those excluded had not been engaged by an academic researcher (n=5), had approached the researcher themselves (n=3) or were involved in a formal organisational initiative (n=1). Three subsequently did not respond to invitations to complete a Doodle Poll. Eight practitioners therefore took part in this fieldwork phase.

A total of eight focus groups took place between October 2018 and March 2019 with these academic researchers (n=17) and practitioners (n=8). Table 4 in *paper 3* details the sample characteristics, including geographical spread, disciplines and academic roles. The researchers provided representation across all disciplines (nursing, midwifery, occupational therapy, physiotherapy, speech and language therapy). Ten were at Professorial or Associate Professorial level and the remainder Lecturer (n=3), Reader (n=2), Research Fellow (n=1) and Doctoral Researcher (n=1). Practitioners were Occupational Therapists (n=4), Physiotherapists (n=2) and Speech and Language therapists (n=2). No nurses or midwives could be recruited.

Across the academic researchers, the level of engagement experience varied. From a total of 73 studies, researchers had on average engaged practitioners in four studies in the preceding three years, ranging from one (n=1) to eight (n=2) (Table 4.1). To show frequency of engagement of practitioners in specific study activities, these were tallied across the 73 studies and shown in Table 4.1. Practitioners were most often engaged by these researchers in protocol design and/or dissemination, followed by participant recruitment and/or data collection. Practitioners who took part in the focus groups had been engaged in one (n=5), two (n=2) or three studies (n=1) over the preceding three years. The detailed findings of the fieldwork phase are presented in *paper 3* (section 4.7).

Table 4.1 Number of studies in which Phase 1 researchers had engaged practitioners in the past 3 years and the study activities in which they were engaged

Number of studies in which researchers had engaged a practitioner			Study activities in which researchers engaged practitioners	
	R1-R4 (n=13)	R5 (Triangulation group) (n=4)	n (Total number across all 73 studies)	
1	1	-	Identifying study topic	36
2	2	2	Literature review	25
3	2	1	Protocol design	44
4	2	-	Ethical approvals	32
5	2	-	Recruitment	37
6	0	-	Intervention delivery	23
7	3	-	Data collection	37
8	1	1	Data analysis	28
			Report writing	34
			Dissemination	44
Total	58	15		

4.3.1 Findings of triangulation group (Focus group R5)

As detailed in chapter three, the four participants who took part in the triangulation focus group were not exposed to the outcome of the theoretical phase prior to the focus group. Instead, the focus group schedule consisted of the same questions that had been used to guide the theoretical phase to inductively establish researchers' perceptions of the necessary pre-conditions (antecedents), defining characteristics (attributes) and outcomes (consequences) of Researcher Practitioner Engagement (Table 3.2). Using the wording of the outcome of the theoretical phase, a coding matrix was set up in NVivo™ (QSR International 2017) to deductively map data derived from this focus group against the outcomes of the theoretical phase. Table 4.2 shows where at least one member of the triangulation group gave an indication of a requirement or consequence of Researcher Practitioner Engagement that aligned with those proposed from the theoretical phase (confirmation). These data show that there were very few components that were not indicated by a participant within this group, thereby providing further confirmation of these components to the concept. Specifically, no reference was made to the variability of the concept or the number or type of activities in which engagement should take place. This group however did highlight the importance of practitioner engagement in the design of the study protocol. Longer term relationships were identified as an additional consequence, as was the opportunity engagement provided for researchers to observe study findings being implemented in the practice setting. When identifying the concept components, participants used language which varied from that which was detailed in the theoretical phase. This alternative language was taken into consideration during the analytical phase. These data were combined with the data from focus groups R1 to R4 and so provided additional data, which is further considered within *paper 3*.

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Table 4.2 Mapping of triangulation data against outcome of theoretical phase

Confirmation		Completeness	
Concept Component *identified from theoretical phase*	**Referred to within Focus Group R5**	**Alternative language used to represent concept component**	**Additional components**
Attributes			
1. Engagement in study activities varies in level and type dependent on study need	No		Joint working a study protocol
2. Values the contribution of researchers and practitioners' perspectives, skills and knowledge	Yes	Recognition of skill gaps	
3. Reciprocal relationship	Yes	Mutually beneficial	
4. Shared decision making in relation to study activities	Yes	Soliciting agreement throughout the process	
5. Two way, ongoing and responsive communication	Yes		Researcher presence in the clinical environment
Antecedents			
1. Identify appropriate practitioner with positive attitude towards study, skills and knowledge relevant to the research topic, shared goals with the researcher	Yes	Research question relevant to practice Shared purpose	
2. Development of a collaborative relationship	Yes	Build a relationship	
3. Organisational support	Yes	Organisational culture that supports engagement	
4. Diagnose and address potential barriers to engagement	Yes	Researcher's understanding of the clinical context	
5. Dedicated practitioner time	Yes	Appreciation of the challenges of the clinical environment	

Table 4.2 Mapping of triangulation data against outcome of theoretical phase (continued)

Confirmation		Completeness	
Concept Component *identified from theoretical phase*	**Referred to within Focus Group R5**	**Alternative language used to represent concept component**	**Additional components**
Consequences			
1.Influences the research process	Yes	Robust research Improved method and data	Long term relationships
2.Integrates research and practice			
• positive changes to practice	Yes		Researchers observe study impact in practice
• practitioner contribution to production of knowledge	Yes		Building research capacity (students and at team level)
• implementation of research into practice	Yes	Findings relevant to practice	
3. Practitioner professional development			
• gain knowledge	Yes		
• develop research skills	No		Practitioner develops dissemination skills
• improve criticality and reflection in practice	No		

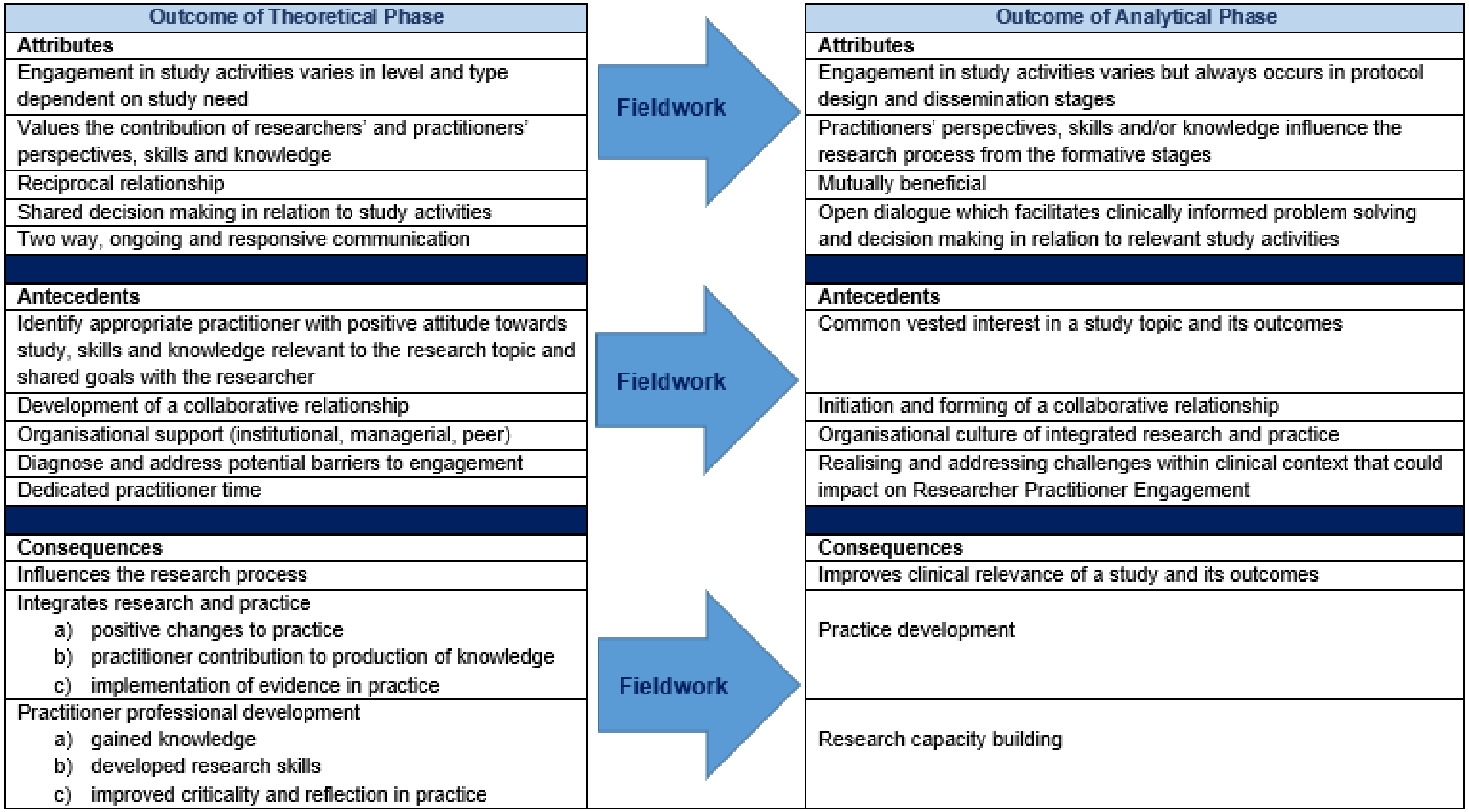
4.3.2 Measuring the concept of Researcher Practitioner Engagement

Empirical referents demonstrate the existence of a concept (Rodgers 2000). Analysis of the instances that had been identified in the scoping review, showed little evaluation of the engagement which took place per se and in the main, it was the subjective experiences of practitioners that had been evaluated. Most often, the barriers and challenges to the engagement process had been explored or described as opposed to measurement of the engagement itself or its influence on a study. Researchers and practitioners were therefore asked to identify ways in which they had measured engagement during their experiences and to discuss ways in which the presence of the concept and/or its specific attributes could be established. In the main, participants' examples concurred with those in the literature. Those who had measured RPE, used process evaluation (AR4), measured against a key performance indicator such as the number of practitioner co-authors and co-applicants (AR4), and recorded protocol changes on a trial register (AR1). Others suggested this evaluation may need to adopt qualitative approaches such as interviews, analysing emails and meeting notes, or alternatively, the use of Likert scales to gauge before and aftereffects. One researcher (AR12) expressed regret at not building in a formal evaluation of the effect of engagement on the practitioners with whom she had engaged based on the level of positive anecdotal evidence she had gathered on the contribution it had made to their practice. One researcher reported that they had just assumed it had taken place (AR10)

4.4 Overview of analytical phase

The experiential lens of participants enabled the concept components to be refined to their most salient elements and provide sound representation of the concept of Researcher Practitioner Engagement. Figure 4.1 illustrates how the concept components proposed from the theoretical phase were amended based on these fieldwork data. No element of the concept which had been proposed in the theoretical phase remained unchanged; most components were refined or removed and what had been proposed as one of the consequences became a defining attribute. The overall outcome of the concept development, including the concept definition based on the concept attributes is shown in Table 4.3.

To illustrate the process of data analysis and transformation from the theoretical phase, fieldwork phase and analytical phase, an example of attribute 2 has been provided in Appendix 21. This detailed presentation of the data shows transparency around the interpretations made by the researcher during the analytical process.



Outcome of Theoretical Phase	Outcome of Analytical Phase
Attributes	**Attributes**
Engagement in study activities varies in level and type dependent on study need	Engagement in study activities varies but always occurs in protocol design and dissemination stages
Values the contribution of researchers' and practitioners' perspectives, skills and knowledge	Practitioners' perspectives, skills and/or knowledge influence the research process from the formative stages
Reciprocal relationship	Mutually beneficial
Shared decision making in relation to study activities	Open dialogue which facilitates clinically informed problem solving and decision making in relation to relevant study activities
Two way, ongoing and responsive communication	
Antecedents	**Antecedents**
Identify appropriate practitioner with positive attitude towards study, skills and knowledge relevant to the research topic and shared goals with the researcher	Common vested interest in a study topic and its outcomes
Development of a collaborative relationship	Initiation and forming of a collaborative relationship
Organisational support (institutional, managerial, peer)	Organisational culture of integrated research and practice
Diagnose and address potential barriers to engagement	Realising and addressing challenges within clinical context that could impact on Researcher Practitioner Engagement
Dedicated practitioner time	
Consequences	**Consequences**
Influences the research process	Improves clinical relevance of a study and its outcomes
Integrates research and practice a) positive changes to practice b) practitioner contribution to production of knowledge c) implementation of evidence in practice	Practice development
Practitioner professional development a) gained knowledge b) developed research skills c) improved criticality and reflection in practice	Research capacity building

Figure 4.1: Overview of the changes made to the concept components following the analytical phase

4.5 Outcome of the concept development

Based on the outcome of the analytical phase, the concept components were used to devise a concept definition (Table 4.3). Table 4.4 demonstrates how this concept has extended the theoretical framework of this study and allows for comparison of the characteristics of the concept of Researcher Practitioner Engagement alongside those of the engagement paradigm and the hired hand approach.

Table 4.3 The concept components and definition of the concept 'Researcher Practitioner Engagement'

Attributes	Antecedents	Consequences
Engagement in study activities varies but always occurs in protocol design and dissemination stages	Common vested interest in a study topic and its outcomes	Improves clinical relevance of a study and its outcomes
Practitioners' perspectives, skills and/or knowledge influence the research process from the formative stages	Initiation and forming of a collaborative relationship	Practice development
Mutually beneficial	Organisational culture of integrated research and practice	Research capacity building
Open dialogue which facilitates clinically informed problem solving and decision making in relation to relevant study activities	Realising and addressing challenges within clinical context that could impact on researcher practitioner engagement	

Tentative definition of the concept of 'Researcher Practitioner Engagement'

Researcher Practitioner Engagement is a mutually beneficial process, through which practitioners are engaged by researchers to actively contribute to the production of research-derived knowledge which is meaningful to their practice. Practitioners' clinical perspectives, skills and/or knowledge influence a study from its formative stages and, through open dialogue, are used to problem solve and inform decision making in relevant study activities to optimise the clinical relevance of the study and its outcomes.

Table 4.4 Updated theoretical framework with the addition of Researcher Practitioner Engagement

Hired Hand Approach (Roth 1966)	**Researcher Practitioner Engagement** (Daniels *et al.* 2020)	**Engagement Paradigm** (Bowen and Graham 2013)
Who	**Who**	**Who**
Hired Hand: those assigned a task within a study by the researcher	Practitioner: with a common vested interest in the study and its outcomes and relevant knowledge of the study's clinical context	Knowledge user: those who will act on the knowledge generated by a study
Why	**Why**	**Why**
Achieve researcher's goals	Ensure clinically informed decisions that will optimise the relevance of the study and its findings to produce clinically relevant research-derived knowledge	Co-production of knowledge
Activities	**Activities**	**Activities**
Assigned tasks (for example, participant recruitment or data collection) **No** involvement in: • study design • decisions about how the study is carried out • what will be done with the research after it is produced	Engagement of practitioner(s) in protocol development to ensure clinical perspectives are reflected in the study design Researchers and practitioners make decisions and problem solve together in relation to relevant study activities Practitioner role in the dissemination of study findings	Practitioner is engaged in all or most study activities Researchers and knowledge user collaboratively make decisions on: • the research question • study design • data collection approaches • outcome measures • analysis of results • relevance of findings • dissemination of findings

continued

Table 4.4: Continued

Hired Hand Approach (Roth 1966)	**Researcher Practitioner Engagement** (Daniels *et al.* 2020)	**Engagement Paradigm** (Bowen and Graham 2013)
The 'hired hand': • feels no ownership of the study • adheres to a rigid plan • might have a desire to make a creative contribution but any suggestions are ignored • a pre-formed plan means cannot openly introduce variations which may make the study more meaningful for them • has little or no opportunity to express any intrinsic interest in the outcome	The practitioner: • uses their clinical perspectives, skills and/or knowledge to influence the research process from the formative stages to ensure clinical relevance of the study and its findings • engages in open dialogue with researcher(s) to facilitate clinically informed problem solving and decision making in relation to relevant study activities • is respected by the researcher as having an equitable role to play in the production of knowledge which underpins clinical practice • finds the process beneficial to their professional development and/or clinical practice	The knowledge user: • has a genuine and equal partnership with researcher based on mutual respect • shares decision-making power • skills and knowledge of equal value to researcher's skills and knowledge
Outcomes	**Outcomes**	**Outcomes**
• restricted outputs by hired hand • deviations from the assigned task • causes a study to take longer to conduct • likely to introduce dubious data and interpretations into the process of analysis	• improved clinical relevance of a study and its outcomes • practice development • contributes to research capability building	• generates relevant research • multidirectional learning

4.6 The conceptual model of Researcher Practitioner Engagement

The outcome of this concept development has been used to produce a conceptual model of Researcher Practitioner Engagement. The model provides a diagrammatic representation of the phenomenon that has been observed, succinctly communicating the variables which are believed to play an important role in engaging frontline practitioners in the research process and the outcomes that can be expected.

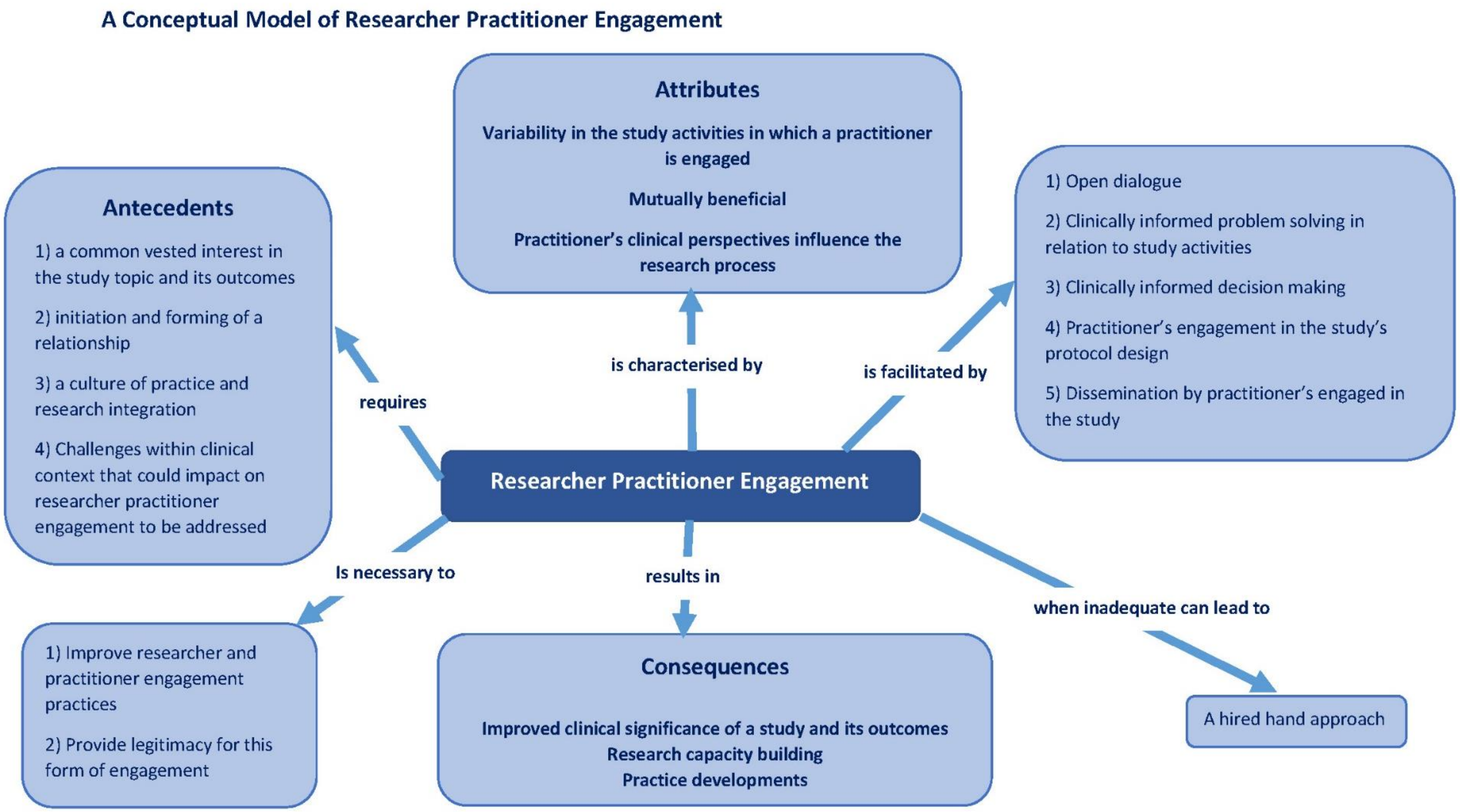


Figure 4.2: A Conceptual Model of Researcher Practitioner Engagement

4.7 Paper 3

Paper 3: Research Article

Researcher Practitioner Engagement in healthcare research: Development of a concept

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Abstract

Healthcare practitioners rely on knowledge derived from research to inform care. They face challenges utilising this evidence when research produced by academic researchers is perceived irrelevant to clinical practice. Engaging practitioners in knowledge production is postulated to address this issue. From observing published examples of this activity, a form of engagement was noted which differed from other engagement approaches, but which was ambiguous and poorly defined. By labelling this phenomenon Researcher Practitioner Engagement and adapting Schwartz-Barcott and Kim's (2000) hybrid model of concept development, a new concept was proposed and developed. Grounded in the experiences of healthcare practitioners and academic researchers, the defining attributes, pre-requisites and potential outcomes of this concept were identified. The key is, regardless of the study activity in which a practitioner is engaged, their clinical perspectives must influence the design of the study protocol, creating opportunities for the clinical relevance of a study to be influenced.

Keywords

Concept development, focus groups, practitioner engagement, research engagement

Background

Research is a key component of evidence informed healthcare. However, despite the significant role research plays in informing safe, effective and efficient patient care, a gap between what is known from research and the reality of what happens in everyday clinical practice is a well-versed issue. Although contributory factors are complex and multifactorial, the conduct of studies by researchers which produces evidence irrelevant to the needs of frontline healthcare practitioners is repeatedly cited (Bowen and Graham, 2013; Greenhalgh, 2017). A conventional approach whereby researchers identify and solve a problem within an academic environment, then passively make the findings available to practitioners, neither addresses issues that have arisen from practice or includes processes within a study which reflect practice contexts (Corcoran, 2008; Oborn et al., 2010). This claim, that the knowledge generated by researchers is not the knowledge required in clinical practice (Gray et al., 2015; Greenhalgh, 2017), has led to the research-practice gap being declared a knowledge production issue (Bowen and Graham, 2013).

Although evidence of funded, collaborative initiatives between academic institutions and healthcare providers is evolving globally, not all health researchers are based in formal collaborative arrangements. Less appears known about engagement between academic researchers and healthcare practitioners at the individual micro level (Pawson, 2013) and recent concerns have been raised that the gap between academia and healthcare providers is widening (Academy of Medical Sciences, 2020). When scoping literature for examples of how academic researchers reported they had engaged frontline practitioners from nursing, midwifery, occupational therapy, physiotherapy and speech and language therapy disciplines in the research process, we observed different engagement behaviours and outcomes (*removed for peer review purposes*) and from these examples, three varying forms of engagement were discerned. Two can broadly be aligned with existing theoretical propositions, however it is proposed that a third is a form of engagement not yet formally conceptualised. Here, the novel approach taken to empirically develop a new concept to label and define the phenomenon observed is shared and the necessity for this conceptual development justified.

Ways in which healthcare practitioners are engaged in academically initiated research

A hired hand approach: Examples sourced from nursing and therapy literature, suggest that practitioners are most often engaged by academic researchers in the execution of activities outlined within a study protocol, namely participant recruitment, data collection and/or intervention delivery (*removed for peer review purposes*). The integral part that frontline practitioners play in this execution cannot be disputed. Patient facing roles place practitioners in a prime position to offer prospective study participants the opportunity to take part in relevant research (Department of Health, 2015; French and Stavropoulou, 2016; Nelson, 2007). Their skill set, personal characteristics and existing relationships can help to support patients in the process of choosing to take part (Cronin et al., 2019; Donovan et al. 2014; Lavender et al., 2019; Mann, Delgado, & Horwood; 2014; Morrison-Beedy et al., 2001) and their clinical roles make them well placed to deliver study interventions as part of routine care. In some examples when practitioners were engaged to assist researchers execute aspects of a study protocol, such as participant recruitment or data collection, a form of engagement known as a hired hand approach was adopted (Roth, 1966) (Table 1). Practitioners were offered little opportunity to influence the study and, as a consequence, their behaviours highlighted potential threats to the study's outcome through impacts on aspects such as recruitment rates (Dyson and Dyson, 2014; Poat et al., 2003). Hired hand research is characterised by practitioners feeling no ownership of a study and follows a pre-formed plan laid out by the researcher which cannot be varied (Roth, 1966). The effects of such an approach can cause the 'hired hand' to deviate from the assigned task, restricting their output and with the potential to threaten the quality of the data collected (Roth, 1966). These behaviours and outcomes are similar to those identified by others who have relied on practitioners for recruitment. Factors such as a practitioner's attitude towards a study and research generally, the demands of clinical workloads, lack of equipoise and perceived conflicts between clinical and research roles are believed to affect willingness of practitioners to refer patients to clinical research (Daly, Hannon, & Brady, 2019; Dyson and Dyson, 2014; French and Stavropoulou, 2016; Mairs, Lovell, & Keeley, 2012; Patterson et al., 2010; Sullivan-Bolyai et al., 2007; Tromp and van de Vathorst, 2015; Ziebland et al., 2007). Ultimately, patients' choice to take part can be impacted and potentially eligible participants excluded, resulting in studies which fail to reach recruitment targets, require additional resources to extend study timetables, or biased samples brought about by selective inclusion behaviours (Loades et al., 2019; Tromp and van de Vathorst, 2015).

Table 1: Comparison of the characteristics of the 'hired hand' approach and the engagement paradigm

Hired Hand Approach (Roth, 1966)	**Engagement Paradigm** (Bowen and Graham, 2013)
Who	**Who**
Hired Hand: those assigned a task within a study by the researcher	Knowledge user: those who will act on the knowledge generated by a study
Why	**Why**
Achieve researcher's goals	Co-production of knowledge
Activities	**Activities**
Assigned tasks (or example, participant recruitment or data collection) No involvement in: • the study design • decisions about how the study is carried out • what will be done with the research after it is produced	Researchers and knowledge user collaboratively make decisions on: • the research question • study design • data collection approaches • outcome measures • analysis of results • relevance of findings • dissemination of findings
Characteristics	**Characteristics**
Hired hand: • feels no ownership of the study • adheres to a rigid plan • might have a desire to make a creative contribution but any suggestions are ignored • a pre-formed plan means they cannot openly introduce variations which may make the study more meaningful for them • has little or no opportunity to express any intrinsic interest in the outcome	Knowledge user: • has a genuine and equal partnership with researcher based on mutual respect • shares decision-making power • skills and knowledge of equal value to researcher's skills and knowledge
Outcomes	**Outcomes**
• restricted outputs by hired hand • deviations from the assigned task • causes a study to take longer to conduct • likely to introduce dubious data and interpretations into the process of analysis	• generates relevant research • multidirectional learning

***A fully engaged approach*:** In other examples of practitioner engagement by academic researchers sourced during our scoping review (*removed for peer review purposes*), situations were observed when studies were underpinned by an approach which was participatory in nature (Gettrust et al., 2016) or made use of guiding theoretical propositions such as Integrated Knowledge Translation (IKT) (Andrew, Johnston & Papadopoulou, 2013; Fredericks et al., 2015). These examples strived to ensure practitioners, as research users, were engaged in all or most study activities and demonstrated a clear endeavour to ensure they played a key role in the knowledge production process. A range of theoretical propositions have this high level of collaboration between those who produce research and those who will benefit from it at their core. Participatory methodologies, mode 2 knowledge production, engaged scholarship and Integrated Knowledge Translation (IKT) are terms used variously and interchangeably across the literature, with many similarities but also important conceptual differences (Bowen, 2013). A term used consistently across these collaborative approaches is ‘co-production of knowledge’, a process through which researchers and research users undertake a study together (Antonacopoulou, 2010; Armstrong and Alsop, 2010). Although many references to co-production suggest that core characteristics are equality and power sharing across the research process (Beckett et al., 2018), the term co-production is ambiguous (Filipe et al., 2017) and viewed as a ‘notion’ or ‘a way of seeing things’ as opposed to a clearly defined guiding theory (Wehrens, 2014) with typologies which demonstrate that it can take different forms (Martin, 2010). In Canada, Integrated Knowledge Translation (IKT), has become the term coined to refer to co-production (Graham et al., 2019). Its development has been underpinned by an engagement paradigm (Table 1) which harnesses the characteristics of an approach which brings together those who produce and those who use healthcare research, with the specific goal of increasing the application of research through relevant, better quality studies (Bowen and Graham, 2013). Devised in antipathy of the knowledge transfer paradigm, engagement paradigm principles address the assertion that the research practice gap is a knowledge production issue as opposed to a problem in the way research evidence is transferred to its intended users (Bowen and Graham, 2013). Designed to bring together different areas of expertise to affect the relevance of a study (Bowen, 2013), IKT is driven by the need to engage with the most relevant parties (Nutley, 2010) and those likely to act on the knowledge that is generated (knowledge users).

An undefined approach: We observed a third form of engagement which did not fully align with the defining characteristics of either the engagement paradigm or the hired hand approach. Examples showed how researchers had engaged practitioners in some aspects of the research process, predominately in the execution of the study protocol, with evidence to suggest that the practitioner’s role had in fact offered them the opportunity to contribute to the knowledge production process. Like hired hand research, practitioners were engaged in a small number of research activities, usually recruitment, data collection and/or intervention delivery and so not aligned with the principles of the engagement paradigm as engagement had not taken place in all or most of the research activities. However, outcomes observed in instances of this type of engagement did not concur with those associated with a hired hand approach as a range of positive effects on the study, clinical practice and/or the practitioner’s development were noted which suggested potential for some influences on the relevance of the study processes and/or findings. Examples included changes made within a study to be more reflective of clinical context (Bullen et al., 2014), research procedures refined to incorporate clinicians’ concerns (Campbell et al., 2015) and clinicians noting increased awareness of the research process and changes to elements of their clinical practice (Di Bona et al., 2017; Eriksson et al., 2013). It was therefore concluded, in light of existing conceptualisations, that a phenomenon that could not be accounted for by current theoretical concepts had been observed. It was hypothesised that by developing a theoretical concept specific to this form of practitioner engagement by academic researchers which converges around one defined term, could open conversations and begin to develop a consistent body of literature relating to this form of engagement practice which could overcome current inconsistencies and limitations in the reporting of engagement practices (*removed for peer review purposes*).

Developing a new concept: A concept is formed by grouping characteristics common to a phenomenon and provides a representative label which can both succinctly communicate the concept and ensure consistent meaning when utilised (Meleis, 2012; Rodgers and Knafl, 2000). By doing so, order can be given to experiences of the phenomenon to enhance understanding (Meleis, 2012). Like many other behavioural concepts in healthcare research, the phenomenon observed is indirectly inferred as opposed to explicitly defined (Morse et al., 1996). To succinctly communicate and represent the observed phenomenon, the label 'Researcher Practitioner Engagement' was adopted based on interpretation of the phenomenon, frequency of terminology observed in a review of literature (*removed for peer review purposes*) and understanding of related theoretical propositions and which would be exposed to scrutiny as part of the concept development process (Meleis, 2012). The overall aim, therefore, was to develop the concept of Researcher Practitioner Engagement in the context of academically initiated healthcare research in relation to the professions of nursing, midwifery, occupational therapy, physiotherapy and speech and language therapy.

Study objectives

1) to establish what constitutes the concept by identifying the attributes, antecedents and consequences to both define and delineate it from other concepts
2) to determine if the concept is deemed necessary by academic researchers and frontline practitioners
3) to confirm the suitability of the concept label

Choice of approach

As confirmed by the preliminary scoping review, the concept of Researcher Practitioner Engagement is poorly developed, poorly explained, and has a lack of defined parameters which means it is not easily discernible in literature (Morse et al., 1996). This immaturity necessitates an approach that is not reliant solely on theory, but one which will enable experiential data to form part of the concept development process. Therefore, qualitative methods, which will allow for an inductive approach, are advocated (Morse et al., 1996). The hybrid model of concept development (Schwartz-Barcott & Kim, 2000) was used as a framework and adapted to optimise rigour and usefulness of the results. In a three-phase approach, theoretical strategies and qualitative methods are combined to produce outcomes based on an extensive literature review and empirical data developed from actual cases to enrich analysis (Morse, 1996; Hupcey et al.,1995). The steps outlined by Rodgers (2000) evolutionary concept analysis provided a systematic, transparent framework to inductively capture the essence of the concept in the theoretical phase, followed by a fieldwork phase in which academic researchers and practitioners took part in focus groups and used their engagement experiences to contribute to the concept development.

Theoretical phase: Ten instances of the observed phenomenon identified in the initial scoping review (*removed for peer review purposes*), and a further instance retrieved by repeating the search six months later (March 2018), identified related concepts of stakeholder engagement (Concannon et al., 2014; Deverka et al., 2012) and Practitioner Researcher Engagement (Brown et al., 2001, 2003), and an exploration of the definition engagement in healthcare (Norris et al., 2017) were used as sources in this theoretical phase. Sources were transferred to and managed in NVIVO® (Version 11) and using qualitative content analysis (Mayring, 2014; Elo and Kyngas, 2008), factors required for Researcher Practitioner Engagement to occur (*attributes*), the conditions necessary before Researcher Practitioner Engagement can take place (*antecedents*) and the outcomes of Researcher Practitioner Engagement (*consequences*) were extracted. Within each of these three categories, sub-categories were inductively generated by grouping similar or related components and naming each with a representative label (Elo and Kyngas, 2008). This process was iterative as sub-categories were revisited and recategorised through continual reflection and abductive inference (Krippendorff, 2013) and continued until all evident conceptual components were identified. The outcome of this phase can be found in Table 2.

Table 2: Outcome of theoretical phase of concept development (scoping review)

Attributes Characteristics that make it possible to identify that a situation or instance can be categorised as the concept under consideration	**Antecedents** Events that are necessary prior to the concept occurring	**Consequences** Outcomes brought about by the concept
1. Engagement in study activities varies in level and type dependent on study need (Brown et al., 2001, 2003; Bullen et al., 2014; Norris et al., 2017) **2. Values the contribution of researchers and practitioners' perspectives, skills and knowledge** (Brown et al., 2001, 2003; Campbell et al., 2015; Deverka et al., 2012; Norris et al. 2017; Patterson et al., 2011) **3. Reciprocal relationship** (Campbell et al., 2015; Brown et al., 2003; Norris et al., 2017; Patterson et al., 2011) **4. Shared decision making in relation to study activities** (Brown et al., 2001; Campbell et al., 2015; Concannon et al., 2012; Deverka et al., 2012; Eriksson et al., 2013; Norris et al. 2017) **5. Two way, ongoing and responsive communication** (Brown et al., 2001; Bullen et al., 2014; Campbell et al., 2015; Deverka et al., 2012; Eriksson et al., 2013; Norris et al. 2017; Roll et al., 2013; Stockwell-Smith et al., 2015)	**1. Identify appropriate practitioner with positive attitude towards study, skills and knowledge relevant to the research topic and shared goals with the researcher** (Bullen et al., 2014; Campbell et al., 2015; Di Bona et al. 2017; Eriksson et al., 2013; Finlayson et al., 2005; Norris et al., 2017; Roll et al., 2013; Stockwell-Smith et al., 2015) **2. Development of a collaborative relationship** (Albers and Sedler, 2004; Campbell et al. 2015; Stockwell-Smith et al., 2015;) **3. Organisational support** (institutional, managerial, peer) (Stockwell-Smith et al., 2015) **4. Diagnose and address potential barriers to engagement** (Albers and Sedler, 2004; Bullen et al., 2014; Campbell et al., 2015; Di Bona et al., 2017; Roll et al. 2013) **5. Dedicated practitioner time** (Albers and Sedler, 2004; Boase et al., 2013; Bullen et al. 2014; Di Bona et al., 2017; Stockwell-Smith et al., 2015; Roll et al., 2013)	**1. Influences the research process** (Bullen et al., 2014; Campbell et al., 2015) **2. Integrates research and practice** • positive changes to practice (Stockwell-Smith et al., 2015; Roll et al., 2013; Boase et al., 2012) • practitioner contribution to production of knowledge (Albers and Sedler, 2004; Di Bona et al., 2017; Roll et al., 2013) • implementation of research evidence into practice (Roll et al., 2013) **3. Practitioner professional development** • gained knowledge (Campbell et al., 2015) • developed research skills (Campbell et al., 2015; Di Bona et al., 2017; Roll et al., 2013) • improved criticality and reflection in practice (Boase et al., 2012; Eriksson et al. 2013)

Fieldwork phase: The main aim of this phase was to corroborate the concept using empirical observations (Schwartz-Barcott & Kim, 2000). Perspectives of academic researchers and frontline practitioners with engagement experience were used to confirm, refine, expand and/or exclude the tentative attributes, antecedents and consequences inferred from the theoretical phase. Focus groups enabled participants from different settings to discuss their perspectives, adding depth to the data by allowing for observation, through interactions, of divergent or converging views of the concept components as the relevance of each was discussed. Audio-visual technology (Zoom©) was used to host all groups to enable sampling across the United Kingdom (UK) (*removed for peer review purposes*). Academic researchers were purposefully recruited via study invitations sent directly to research centre leads at all Council of Deans of Health member universities in the UK (n=84) and researchers self-selected against the detailed study criteria (Table 3).

The study was drawn to the attention of frontline practitioners through advertisements in national profession specific publications and through a strategic Twitter campaign. Of the forty academic researchers and twenty practitioners who volunteered, seventeen researchers and eight practitioners met the study criteria and were available to take part in eight scheduled focus groups, conducted between October 2018 and March 2019. Researchers represented universities from all regions of the UK, across a range of academic roles and clinical backgrounds (Table 4). Practitioners represented occupational therapy, physiotherapy and speech and language therapy, however, no nurses or midwives who met the inclusion criteria could be recruited. Participants were sent the theoretical phase findings for consideration one week prior to their scheduled focus group. Facilitated by the lead researcher (ND), an academic health researcher with experience as a clinical occupational therapist, participants discussed their opinion on the relevance of each proposed concept component, necessity of the concept and the concept label. Audio recordings were transcribed, and visual recordings used to note non-verbal communications. Within NVIVO® (Version 11) verbal and non-verbal responses relating to all concept components were categorised as agree, disagree, partially agree or silence and frequencies within each category calculated to indicate components which required further consideration where 100% agreement was not indicated. Using qualitative content analysis techniques (Mayring, 2014), patterns in reasons for confirmation, refinements or elaborations were identified. Participants' views on the necessity of the concept and concept label were analysed and reasons categorised.

Table 3: Inclusion criteria for participants in the fieldwork phase of the concept development

Academic Researchers	Frontline Practitioners
Inclusion criteria	
Academic researchers or doctoral researchers based in faculty/college of health-related subject areas within Higher Education Institute in the UK	Front line practitioners (nursing, midwifery, occupational therapy, physiotherapy, speech and language therapy) delivering care to service users in a health care context
Principal Investigator of at least one health-related research study completed within the past 3 years (concerning nursing, midwifery or occupational therapy, physiotherapy, speech and language therapy practice)	Engagement by an academic researcher from a University setting in at least one health-related research study (other than as a participant) within the past 3 years
Self-reported experience of engagement of practitioner(s) in a role other than as a study participant in at least one research project in the past 3 years	
Exclusion criteria	
Employed solely within a health setting	In a role with formal research responsibilities (e.g. Clinical Research Nurse, Clinical Academic, Research Therapist)
Solely employed with an organisation or system specifically funded to support collaborative practices across academic and health organisations (for example CLARHC)	

Table 4: Characteristics of the fieldwork phase participants by focus groups

	Focus Group	**n**	**UK Region**	**Role**	
Academic Researchers (n=17)	**Exposed to findings of theoretical phase**				
	R1 (AR1 AR2 AR3 AR4)	4	England (n=2) Scotland (n=1) N. Ireland (n=1)	**Academic role**	Professor (n=2) Lecturer (n=1) Research Fellow (n=1)
				Clinical area	Nursing (n=2) Physiotherapy (n=1) Occupational therapy (n=1)
	R2 (AR5 AR6 AR7 AR8)	4	England (n=4)	**Academic role**	Professor (n=4)
				Clinical area	Podiatry (n=1) Speech and language therapy (n=1) Occupational therapy (n=1) Nursing (n=1)
	R3 (AR9, AR10, AR11)	3	England (n=3)	**Academic role**	Professor (n=1) Associate Professor (n=1) Lecturer (n=1)
				Clinical area	Nursing (n=2) Unknown (n=1)
	R4 (AR12, AR13)	2	England (n=2)	**Academic role**	Professor (n=1) Doctoral researcher (n=1)
				Clinical area	Nursing (n=1) Speech and language therapy (n=1)
	Not exposed to findings of theoretical phase (Triangulation group)				
	R5 (AR14, AR15, AR16, AR17)	4	England (n=1) Scotland (n=2) N. Ireland (n=1)	**Academic role**	Professor (n=1) Reader (n=2) Lecturer (n=1)
				Clinical area	Midwifery (n=1) Physiotherapy (n=1) Occupational therapy (n=1) Nursing (n=1)
Practitioners (n=8)	**Exposed to findings of theoretical phase**				
	P1 (Pr1 Pr2 Pr3)	3	England (n=3)	Physiotherapist (n=1) Occupational therapist (n=1) Speech and language therapist (n=1)	
	P2 (Pr4 Pr5)	2	England (n=1) Wales (n=1)	Occupational therapist (n=2)	
	P3 (Pr6 Pr7 Pr8)	3	Scotland (n=1) England (n=2)	Physiotherapist (n=1) Occupational therapist (n=1) Speech and language therapist (n=1)	

AR = Academic Researcher participant codes Pr = Practitioner participant codes

Analytical phase: The purpose of this final phase was to integrate the literature and empirical data (Schwartz-Barcott et al., 2002). A journal was iteratively added to throughout both phases to record researcher interpretations and ensure transparency in the analysis process. These interpretations were a key tool in this analytical process and involved moving iteratively between focus group data and returning to the instances analysed in the theoretical phase to ensure sound representation of each component prior to establishing the concept definition.

*Trustworthiness***:** By following a dedicated checklist (Elo et al., 2014), several steps were taken to ensure the credibility, dependability, confirmability and transferability of this concept development (Lincoln and Guba, 1985; Tracy 2010). A key action was to establish validity through confirmation and enhance understanding of the concept through methodological triangulation; four academic researchers scheduled to take part in one focus group (Focus Group R5) were not exposed to the outcome of the theoretical phase and instead asked to identify the attributes, antecedents and consequences of the concept solely from their experiences. This focus group was facilitated by a member of the research team (PG), also an academic with a clinical midwifery background, who had not been exposed to the final outcome of the theoretical phase. Triangulated data were mapped to the theoretical phase outcome to identify convergences and additional concept components, helping to establish validity both through confirmation and by enhancing understanding of the concept through completeness (Breitmayer et al. 1993; Risjord et al. 2009). Recruitment challenges prevented triangulation with practitioner participants. Member checking via a two-page summary of key discussion points from each group highlighted no disagreements with accuracy. As academic researchers, and therefore ‘insiders’ (Finefter-Rosenbluh, 2017) reflexivity was essential and ensured through critical self-reflection of our positionality (Berger, 2015), identifying any potential influences on the data collection and analysis and monitoring any potential effects through an audit trail of interpretations maintained in a journal.

*Ethical considerations***:** Approval to carry out the study was obtained from (*removed for peer review purposes*). All key ethical considerations outlining study involvement, handling and privacy of data and withdrawal procedures were communicated during the recruitment phase and informed written consent obtained to make audio and visual recordings of discussions.

Findings

Five attributes, five antecedents and three consequences were identified in the theoretical phase (Table 2). Findings derived from the fieldwork phase, with illustrative quotes, demonstrate the perspectives of participants which were used to refine, eliminate or elaborate the concept components originally proposed.

Attributes

Frequency of agreement with each attribute was established (Table 5). There was unanimous agreement in the focus groups of academic researchers and practitioners that Researcher Practitioner Engagement varies in level and type dependent on study need but also on the study design;

> *"the amount of involvement and engagement needs to be appropriate for what's happening, rather than it just being a kind of a push towards maximum involvement and engagement for the sake of it"*
>
> AR12 (Focus group R4)

In addition, the importance of the perspectives, skills and knowledge of both researchers and practitioners to this concept was confirmed, with researchers valuing what each party can offer;

> *"people bring different things and it's absolutely valuing and respecting the different things that people bring to the whole process"* AR5 (Focus group R2)

"it's the recognition of the skills that a researcher has, that a clinician may not and the skills that a clinician has in terms of the clinical insight, that the researcher may not" AR17 (Focus Group R5; triangulation group)

Table 5: Levels of agreement with the attributes of Researcher Practitioner Engagement proposed from the theoretical phase

	Focus Groups R1-R4	**Focus Groups P1-P3**
	Researchers (n=13)	**Practitioners (n=8)**
Attribute 1: Varies in level and type dependent on study need		
Agree	12	7
Silence	-	1
Absent	1	-
Attribute 2: Reciprocal relationship through which academic researchers and practitioners can enrich each other's knowledge and skills		
Agree	6	5
Partially agree	6	3
Absent	1	-
Attribute 3: Values the contribution of researchers and practitioners' perspectives, skills and knowledge		
Agree	12	8
Silence	1	-
Attribute 4: Shared decision making in relation to study activities		
Agree	2	1
Partially agree	7	7
Disagree	1	-
Silence	3	-
Attribute 5: Two way, ongoing and responsive communication		
Agree	5	5
Partially agree	3	3
Silence	5	-

Practitioners need to feel like their perspectives and contribution is not only valued, but as important as the researchers;

> *"a tendency for the researchers to think they're driving the project and that the practitioners are just supplying information and maybe their contributions are not as valuable"* Pr8 (Focus group P3)

The importance of a practitioner's clinical perspectives to the design of a study was emphasised, suggesting that the concept attributes should be elaborated to ensure practitioner engagement is evident in a study's formative stages.

> *"that's where I often feel most valued as a clinician,* [protocol stage] *because you're bringing that clinical knowledge……helps clinicians to feel that they've got a greater contribution to the actual research process"*
> Pr6 (Focus group P3)

As researchers acknowledged, many have been clinicians themselves, but practitioners felt that current and specific knowledge of the clinical setting must be considered in a study protocol;

> *"I don't think they've* [researchers] *actually worked clinically for quite some time…….there's a few things they'd just assumed would happen and we were like Oh no, it doesn't really work like that anymore"*
> Pr4 (Focus group P2)

> *"you know the obstacles and the opportunities and what you're facing day in, day out……that needs to be reflected when you're thinking about a research proposal"* Pr2 (Focus group P1)

> "*as researchers, we just didn't have that on the pulse, at the coal face insight"*
> AR15 (Focus Group R5)

When practitioners had not been engaged in these early stages, frustrations were voiced;

> *"it's sometimes hard to see how the research is going to be relevant to practice, because the group of patients that they* [the researchers] *select is so small and the exclusions are so high, that it actually doesn't really reflect the true population"* Pr8 (Focus group P3)

Researchers from the triangulation group (Focus group R5) also reported the value of early involvement and felt that co-working a protocol with practitioners enables development of a clinically relevant research question and practitioners to develop a vested interest in the study with greater likelihood of follow up on any recommendations made in their clinical practice;

> *"what you end up with, is something that is significant from a research point of view. So maybe statistically significant, but also has real significance for clinical practice as well"* AR15 (Focus group R5)

The suggestion that shared decision making is an attribute of Researcher Practitioner Engagement was disputed by many, with both researchers and practitioners feeling the 'shared' element is neither feasible nor necessary;

> *"shared sometimes suggests like equal and it definitely isn't"*
> AR6 (Focus group R2)

There was suggestion made that decisions should be negotiated or reasoned as opposed to being labelled as shared. Both parties acknowledged that overall responsibility is afforded to researchers and therefore they may be required to take a lead in decisions;

> *"the researcher probably dominates, as opposed to it being shared and I think that's not necessarily with any mal intention…..as a researcher, they are probably committing so much more…..so they probably have time to be more involved….will have much more ownership of it and……in some ways that's right and that's how it should be, because somebody has to take overall responsibility"* Pr6 (Focus group P3)

Some researchers agreed with the need for shared decision making to take place;

> *"decision making should be shared in order to increase the buy in of the study from the practitioners. Because the more they're [practitioners] involved, the more they are likely to support it and the more the study is likely to be successful"*
> AR12 (Focus group R4)

Practitioners stressed the importance of making decisions together at a study's formative stages, giving them more ownership of the study design. Equally, practitioners felt that it was important for them to have autonomy to make pragmatic decisions during the course of a study, specifically relating to the clinical context and patient need;

> *"if I was being told you need to get it done on those days, it would really sort of make me much more stressed, or not really be kind of enthusiastic about trying to recruit patients…knowing that I can pick and choose the days makes it easier. Those small little details of having some freedom. It makes a big difference in how you feel about the study"* Pr7
> (Focus group P3)

Researcher driven decisions can then cause difficulties;

> *"sometimes it is researcher driven, as opposed to clinician driven….the day that the researcher was available to come and collect data, did not fit with our clinic schedule at all and that was quite hard to navigate and negotiate to make it beneficial for everybody"* Pr6 (Focus group P3)

There was a sense that one party may be better placed to make a decision over another as one person's set of skills or knowledge might be more relevant to a particular decision;

> *"researchers are very good around methods and kind of theoretical constructs and clinicians are really good at what actually works. It's actually acknowledging that people have more of a right to talk about certain things…and their voice should be louder than, you know, the other person"* AR5 (Focus group R2)

Examples shared by practitioners related to their clinical knowledge and its impact on study processes, such as the optimal time for scheduling of study interventions or data collection based on their understanding of patient's clinical need or aspects of the clinical context. Practitioners felt, that when their clinical perspectives were not considered in reasoning around these aspects of a study, impractical decisions could be made, which could jeopardise the validity of the data collected or the likelihood of patient participation. The triangulation group (Focus group R5) did not refer specifically to 'Shared Decision Making' but used phrases like co-production, working together, shared understanding and soliciting agreement. Their clear focus when identifying the attributes of the concept was on the importance of the practitioner's clinical knowledge to the research process and on the subsequent quality of the outcome of the study. Additionally, the importance of the practitioner's role in study dissemination was stressed, so those who might benefit, receive the findings via those with a stake in the study;

> *"The so what factor for practice should come from those who have engaged in the study……so once we have findings, they* [practitioners] *are the ones that say 'let's do this, let's put this into practice"* AR12 (Focus group R4)

A final attribute of reciprocity was considered important to ensure the process is not one sided in favour of the researchers, so practitioners do not feel like they are '*feeding the research machine'*. The importance of reciprocity was confirmed through examples when practitioners had been asked to carry out a functional role such as data collection, and questioned the benefit they had gained from the process;

> *"it can feel, as a clinician, that you're really just providing the study population and it doesn't feel reciprocal in terms of developing your knowledge and skills and potentially research capacity"*
> Pr6 (Focus group P3)

Although researchers in focus group R5 (triangulation) did not use the term reciprocity, the importance of a 'mutually beneficial process' was highlighted. Finally, although it was agreed in general that communication is essential, more specifically, practitioners appreciated open communication channels when they felt able to contact the researcher if and when required. From the triangulation group's perspective, an open and responsive dialogue was seen to contribute to practitioner buy in to a study, and enable them to communicate issues to the researcher and seek advice on how to act;

> *"you need to have that kind of solid relationship where you can be at the end of the phone to answer the questions that might feel quite small, but actually are fundamental to the project"* AR15 (Focus group R5)

This can be facilitated by the researcher ensuring a presence in the clinical environment in order to develop these relationships;

> *"it* [presence in the clinic] *was so necessary to just secure that engagement and make my relationships really good…forming this relationship is an important part of this, rather than just always being at the end of the phone"*
> AR14 (Focus group R5)

Antecedents

The theme of a culture of research and practice integration interspersed discussions around the antecedents proposed, in particular in relation to practitioners' time. Participants' views stemmed mainly from the barriers and facilitators they had experienced, which gave insight into the conditions necessary for Researcher Practitioner Engagement, many of which participants claimed to be strengthened by an organisational culture that recognises research as integral to a practitioner's role;

> *"the whole sort of culture of research being fundamental to clinical practice is really really important, because if the institution and the organisation only ever sees it as an add on, then that sends out the whole wrong message to managers and to peers"* Pr6 (Focus group P3)

Repeatedly, researchers reinforced their experiences of practitioners needing to prioritise clinical care above research activities, whereas practitioners who had been given dedicated time spoke positively of the contribution this made to their ability to engage. Researchers reported making efforts to integrate research tasks into clinical workloads, however practitioners' experiences highlighted how this was not always possible as tasks are being asked of practitioners which are supplementary to their clinical role or sit outside of normal shift patterns. The practitioner's attitude was considered of greatest importance and more specifically, their vision of the potential outcome of the study;

> *"for me as a clinician being involved in research, is actually what impact is this going to make for me, in terms of my practice? So, it's being involved in research that's going to benefit those people that I'm visiting every day"*
> Pr2 (Focus group P1)

> *"if there's a shared understanding, the basis of the research isn't just about increasing the knowledge base .....if you can actually say this will result in this difference to these patients.... I think that brings together a very different level of engagement from a practitioner"* AR5 (Focus group R2)

> *"it has to be something that is meaningful for you in what you do"*
> Pr4 (Focus group P2)

Participants felt that researchers and practitioners are likely to approach this process with different motivations, therefore, the requirement for a shared goal prior to Researcher Practitioner Engagement was disputed. More illustrative of what is required, is that both parties are committed to exploring a topic, but perhaps for different reasons;

> *"sometimes people do have a shared goal, but may have a different understanding of how you go to get there as part of the research process"*
> AR2 (Focus group R1)

Although a collaborative relationship was seen to underpin the engagement process, it was not viewed as a necessary antecedent, predominately as the need to do so is often hampered by limited time available to develop relationships to that level prior to a study. Moreover, the willingness to initiate and develop such a relationship was seen as an important element, and the collaborative relationship a consequence of the process which then paves the way for future engagement experiences.

Consequences

Researchers in the triangulation group (Focus Group R5) made explicit the influences practitioners' clinical knowledge can have on the research process;

> *"the method that I had chosen wouldn't have given us relevant results……but because I had taken on board what the practitioners had told me was their normal practice the findings were actually much more relevant, the data collection was much more robust"* R16 (Focus Group R5)

> *"input from the clinicians definitely shaped the methodology….it definitely shaped the interpretation of findings"* R15 (Focus Group R5)

Although generally, practitioner engagement in the research process was perceived to make the findings of a study ultimately more likely to be implemented in practice, there was disagreement that this should remain a consequence. Some researchers viewed implementation as something very different, to be considered as an additional endeavour, but to which Researcher Practitioner Engagement within a study could perhaps influence;

> *"if you start with engagement in the primary research study those relationships can be carried over to implementation projects"*
> AR11 (Focus group R3)

It was asserted that the ultimate findings of a study may take some time to emerge and so a more likely consequence is instantaneous changes or improvements to local practices. From a professional development perspective, practitioners described an increased confidence in their role, also observed by researchers, in particular when discussing their practice outside of their immediate clinical area, for example at professional meetings or conferences.

> *"I feel like I'm a better clinician for it"* Pr4 (Focus group P2)
>
> *"their confidence has been enhanced and they felt much more capable clinically"* AR11 (Focus group R3)
>
> *"being involved in research helps them* [practitioners] *to feel more like an expert than just doing the clinical practice"* AR10 (Focus group R3)

Reference was made across focus groups to the contribution Researcher Practitioner Engagement can make to building research capacity both at individual and team level. Practitioners reported a ripple effect when benefits are observed by colleagues and students and a culture of engagement within a department can help to retain and attract staff. Although it was disputed that practitioners could develop research skills through this form of engagement, understanding and awareness of research were likely outcomes though it could create opportunities for practitioners to develop skills in journal authorship or presenting at conferences. One researcher described Researcher Practitioner Engagement as a mechanism to develop evidence-based practitioners, helping them to see how research fits within their clinical role. Practitioners agreed that this engagement provided an opportunity to integrate research and practice, allowing them to use research derived knowledge to reason and justify elements of their practice. In light of Researcher Practitioner Engagement being mutually beneficial, researchers also highlighted their own development as an additional consequence, offering opportunities for them to learn more about the clinical area under study.

Establishing the need for this concept

In the main, participants agreed that the proposed concept of Researcher Practitioner Engagement is necessary. Overarching reasons to support this were categorised as a) to improve engagement practices and b) to legitimise this form of engagement. Comparisons were drawn with Patient and Public Involvement (PPI) citing the positive consequences that formally establishing and building a culture around this subgroup of research users had already realised. Participants' thoughts encapsulated the general sense of why a formalised concept is required:

> *"without being able to name it and be able to apply a framework, I think this is going to continue to be a challenge and I think this is a very, very welcome first step in terms of actually beginning to develop a framework that we can then take to managers, to organisations to start to acknowledge what it is that we need"*
>
> Pr6 (Focus group P3)

> *"if you can come up with a definition for this, and if people said "Actually, this is what should be happening" then we can start to say "But actually, that isn't what is going on" ……you can then pinpoint the bits that are missing and say "but actually, it's not real until we've done this, this and this"*
>
> AR4 (Focus group R1)

Despite an overall sense that the concept would be useful to guide successful engagement practices and overcome potential barriers, there were some reservations. Engagement was viewed as integral to the work of one applied researcher who did not believe Researcher Practitioner Engagement needed to be extrapolated as a separate entity. A concern about the extra layer of additional paperwork this could add was also voiced. Despite this, it was also felt that engagement does not happen intuitively and so improving understanding of this type of engagement could firstly, prevent researchers taking for granted that it is being done, and secondly highlight what needs to be addressed to ensure engagement happens in a meaningful way. Those with reservations recognised the benefits of the concept in encouraging them to dedicate thought to a practitioner's role in a study as opposed to merely demonstrating clinical input in funding applications. This was supported by a practitioner who felt that research culture needs to move to approval committees and funding bodies requiring explicit evidence of Researcher Practitioner Engagement similar to requirements for Patient and Public Involvement (PPI). It was also suggested that defining Researcher Practitioner Engagement could lead to more consistency in both engagement practices and the language used, allowing for comparatives to be made, the impact of this type of engagement to be measured and an evidence base developed.

Labelling the concept

Most agreed that the label 'Researcher Practitioner Engagement' was representative of the concept and the components which had been discussed. The term partnership was proposed by some as an alternative, was however, challenged as being overly formal whereas engagement was thought to represent the concept's fluidity.

Outcome of the analytical phase

The experiential lens of participants enabled the concept components to be refined to their most salient elements and provide sound representation of the concept of Researcher Practitioner Engagement. The outcome of the analytical phase is shown in Table 6. No element of the concept which had been proposed in the theoretical phase remained unchanged; most components were refined or removed and what had been proposed as one of the consequences became a defining attribute.

Table 6: Summary of outcome of analytical stage; the components of the concept 'Researcher Practitioner Engagement'

Attributes	Antecedents	Consequences
Engagement in study activities varies but always occurs in protocol design and dissemination stages	Common vested interest in a study topic and its outcomes	Improves clinical relevance of a study and its outcomes
Practitioners' perspectives, skills and/or knowledge influence the research process from the formative stages	Initiation and forming of a collaborative relationship	Practice development
Mutually beneficial	Organisational culture of integrated research and practice	Research capacity building
Open dialogue which facilitates clinically informed problem solving and decision making in relation to relevant study activities	Realising and addressing challenges within clinical context that could impact on Researcher Practitioner Engagement	
Tentative Definition of the concept of 'Researcher Practitioner Engagement' Researcher Practitioner Engagement is a mutually beneficial process, through which practitioners are engaged by researchers to actively contribute to the production of research derived knowledge which is meaningful to their practice. Practitioners' clinical perspectives, skills and/or knowledge influence a study from its formative stages and, through open dialogue, are used to problem solve and inform decision making in relevant study activities to optimise the clinical relevance of the study and its outcomes.		

Discussion

A new form of researcher practitioner engagement

The research practice gap within healthcare is in part attributed to the challenges practitioners face when evidence produced by academic researchers is perceived irrelevant to their clinical practice. Engagement of practitioners in the production of research is considered an effective strategy to overcome this research utilisation issue. However, our observations of examples of engagement showed that it can be delineated into two contrasting forms of a hired hand approach (Roth, 1966) and an engagement paradigm (Bowen & Graham, 2013). Comparing these extremes, illuminates how this division is characterised by a researcher's intentions or motivation for engaging a frontline practitioner in their research endeavours. Researchers who adopt a hired hand approach task those in frontline clinical roles to carry out activities within a pre-defined protocol, on which the practitioner has had no influence. Those adopting a form of engagement which aligns with the characteristics of the engagement paradigm, have a clear intention to co-produce knowledge with practitioners, with the goals of ensuring the study is of clinical relevance. From observing examples of engagement practices reported in healthcare literature, we abductively reasoned the existence of an engagement form that falls between these two extremes, with the potential to afford practitioners the opportunity to influence the clinical relevance of a study. On one hand, it could be argued that these examples were indeed attempts to co-produce knowledge with practitioners in line with the characteristics of the engagement paradigm, but which experienced some of the challenges that have been identified in achieving this ideal (Gagliardi et al., 2016; Oliver, Kothari & Mays, 2019; Rycroft-Malone et al., 2016). Although we accept this could be the case, there were no indications to support this suggestion and behaviours noted, such as practitioner engagement after design of the study protocol, provided further indications that engagement at this level had not been the intention. On the other hand, the engagement observed may well have set out as a form of hired hand research, but by chance resulted in positive outcomes beyond those usually expected when such an approach is adopted. Regardless, by labelling and defining this specific activity, the concept of Researcher Practitioner Engagement responds to calls that healthcare practitioners should be engaged in all methodologies (McCormack, 2011; Pentland et al., 2011). It provides a vehicle by which to address the view that those who provide clinical services should be included in the planning of studies so that the clinical skills and strengths of practitioners are capitalised on in order to enhance study tasks (Cronin et al., 2019; Morrison-Beedy, 2001; Nelson et al., 2007). Through its label and a definition, it also offers opportunity for consistency within the literature to develop an evidence base for this practice (*reference removed for peer review purposes*).

This concept adopts the ethos of ensuring a practitioner's clinical perspectives influence a study and its outcomes, with the clear intention of improving a study's relevance to clinical practice. Through application of its defining characteristics, we hypothesise that Researcher Practitioner Engagement could prevent engagement practices from adopting a hired hand approach, already shown to have the potential to threaten the feasibility and quality of the research process and study outcomes. From evaluations of recruitment practices within clinical trials it has been shown that when understanding of a study is not in place, clinician's views cannot only affect who is recruited, but also their perception of the relevance of the study to their own clinical practice (Ziebland et al., 2007). It is therefore recommended that those who provide clinical services should be included in the planning of studies as a strategy to reduce gatekeeping behaviours (Cronin et al., 2019) and the clinical skills and strengths of practitioners capitalised on in order to enhance study tasks such as recruitment strategies (Morrison-Beedy 2001; Nelson et al. 2007). Behaviours such as referral to a study are considered more likely if clinicians feel a sense of ownership, hold positive views of the intervention being evaluated (Thomas, 2015) and have an understanding of the methodology being used (Lamb et al., 2016).

Roth (1966) asserts that critical appraisal of how knowledge has been produced should include evaluating if a hired hand approach has been adopted and any impact of such an approach has been assessed. Evidence from evaluations of recruitment practices which demonstrate the potential influence practitioners' attitudes and behaviours can have when engaged to execute study tasks, calls into question the trustworthiness of evidence produced by these studies (Dyson & Dyson, 2014). Consequently, the issue of research relevance, i.e. external, social, and ecological validity, to be given equal consideration in a study's design and conduct as that given to the issue of robustness and internal validity has been advocated (Backus & Jones 2013). Appraisal, therefore, could evaluate the presence and influence of Researcher Practitioner Engagement, so studies are assessed not only on methodological quality and rigour but also by establishing if and how clinical relevance was ensured in the knowledge production process.

The principles required to achieve this are clearly articulated within the engagement paradigm, advocated as an approach to knowledge co-production when the goal is to ensure the outcome is research which is of relevance to clinical practice (Bowen & Graham, 2013). Within our proposed concept of Researcher Practitioner Engagement, the need for practitioner's experiential knowledge, and the value placed on this knowledge in the research process, mirrors the engagement paradigm's key components, and so Researcher Practitioner Engagement considered a form of knowledge co-production. Key to the engagement paradigm however, is that research users and producers collaboratively make decisions in relation to all or most study activities, with a focus on partnership and power sharing (Bowen & Graham, 2013). It is here the features which differentiate Researcher Practitioner Engagement from this perceived ideal can be seen. Firstly, from the perspectives of both researchers and practitioners, engagement in all study activities was deemed neither necessary or feasible. Further, a key outcome of our fieldwork was that the concept component with which there was least agreement was that of shared decision making. Some researchers were reluctant to retain the word shared, with a clear message given that a study is ultimately their responsibility, a sentiment with which some practitioners agreed. Moreover, practitioners expressed the need to feel their clinical perspectives are of equal value to the scientific perspectives of researchers generally, and used to influence the research process where required, particularly within the formative stages of a study. Practitioners endorsed this situation as being more feasible in light of other clinical priorities than alternatives which require them to take on greater responsibility and commitment. The value of practitioners' clinical perspectives in the reasoning leading up to and informing decisions was clear and so removal of the shared element and inclusion of clinically informed problem solving, better reflects participants' views of this concept component. Although a researcher's clinical background was perceived to afford benefits to the engagement process, the need for contextually specific, up to date knowledge of the research setting was deemed essential to influence the clinical relevance of the study and its outcomes.

The researcher-initiated agency of Researcher Practitioner Engagement could however, be seen to contradict the egalitarian, bottom up approach of participatory research, in which practitioner-initiated studies are advocated as most likely to produce relevant research (Blevins, 2010). Power imbalances which could result, are thought to pose a challenge to the success of collaborative approaches (Brown et al., 2003; Rycroft-Malone et al., 2016). The addition to the concept from the fieldwork phase of practitioner engagement in devising the study protocol, however, indicates how knowledge hierarchies could be flattened through tangible recognition of a practitioner's perspectives in the study design and an opportunity for compromises to ensure relevant aspects of the study are acceptable to all parties (Newington & Metcalfe, 2014). Engagement in the protocol design is considered a defining distinction of a collaborative approach (Nelson, 2007) and practitioner frustration evident when this does not occur (Blevins, 2010). Experiences drawn on in the fieldwork phase illustrated this frustration when elements such as study inclusion criteria did not resonate with the practitioner's clinical practice or when little consideration of the clinical context affected the patients' opportunity to take part or the practitioner's ability to feasibly carry out the role dictated within the study protocol.

Power differentials could of course be exacerbated by the researcher-practitioner divide perpetuated by a two communities model and the discord created when straddling the separate and differing organisational cultures of academia and clinical practice settings (Oborn et al., 2010; Wehrens, 2014). More specifically, this divide could be characterised by the tensions which can result from the contrasting knowledge concerns of these groups (Buick et al., 2015; Lillehagen et al., 2016). Academic researchers are driven to conduct rigorously developed studies, producing outputs that meet the scientific requirements of traditional dissemination routes and so fulfil the expectations of academically driven citation metrics. A practitioner's interest is in knowledge which addresses problems specific to clinical context and their patients' needs. These separate requirements for rigour and relevance create a barrier to the knowledge derived from research fulfilling the function for which it is intended, that is, to provide evidence to inform healthcare practices and underpin quality of patient care. The increasing need for researchers to demonstrate the impact of their work, means however, it is now imperative they ensure their research will be utilised in practice (Higher Education Funding Council, 2011). Collaboration between researchers and practitioners is therefore essential if studies are to represent the ‘real clinical world’ (Patterson et al., 2010). Adopting a pragmatic approach which strives for a greater balance between rigour and relevance can help support researchers to ensure their research is utilised and so demonstrate impact and return on investment (Higher Education Funding Council, 2011; Kelly et al., 2016). The ideal therefore, is a model which facilitates both rigour and clinical relevance (Rothmore, 2018).

With sparse evidence to demonstrate the impact of co-production on the relevance and utility of a study, outside of participatory action research approaches, it is difficult to create a strong argument that supports the ideal of engaging frontline practitioners in all or most study activities. This isn’t of course to say that this ideal should not be strived for. However, the challenges of doing so must be acknowledged, and feasible ways of achieving collaborative knowledge production recognised (Rycroft-Malone et al. 2016). Since we developed this concept, similar work has also established that co-production can happen at different stages of the research process, and that an array of factors at micro and meso level can threaten the ability to meet the ideal of engagement that occurs through all stages of the research process (Beckett et al., 2018). Researcher Practitioner Engagement can therefore support researchers to enact the principles required to work to achieving their engagement goal of improving the clinical relevance of a study.

Is this new concept necessary?

It could be argued that the phenomenon we observed falls under the sphere of stakeholder engagement and that this concept development was not required. Our recognition of the close alignment between stakeholder engagement and the phenomenon observed indeed led us to analyse definitions of this related case which specifically referred to practitioners within the theoretical phase of this concept development. Although its status as a co-production activity has been debated (Boaz et al., 2018), stakeholder engagement advocates for the involvement of research users at key stages of the research process and assumes that doing so will align research with their needs, improve study quality and affect likelihood of use (Concannon et al., 2012; Deverka et al., 2012) and as such, equated to Integrated Knowledge Translation (Henderson et al., 2014). However, this global term refers to a broad church, not specific to or often inclusive of frontline practitioners, but to a diverse range of stakeholders which can include policy makers, healthcare providers, patients and the public and industry (Camden et al., 2015; Concannon et al., 2012). Although engagement with all user groups is advocated within a study to address different realities and perspectives, each group brings different motivations, expectations and cognitive and emotional perspectives to the research process (Rycroft-Malone et al., 2016), with differences in their research priorities (Owens, Lay & Aitken, 2008) and different strategies required to meet variations in their engagement needs (Henderson et al., 2014). Researchers are advised to identify their stakeholder engagement goals to facilitate identification of those with the relevant perspectives, skills and knowledge, to then establish those best situated to meet the desired outcomes (Camden et al., 2015).

Although an abundance of publications advocate, evaluate and advise on both co-production approaches and stakeholder engagement within healthcare literature, this literature base appears dominated by the role of patients, carers and the public as a distinct group (Camden et al., 2015; Concannon et al., 2019; Paylor and McKevitt 2019; Tembo et al., 2019). Delineating this group, referred to in the United Kingdom as Patient and Public Involvement (PPI) and by other terms internationally such as Patient Oriented Research (Canadian Institutes of Health Research, 2019) has evolved to become a key feature of health research internationally (Staniszewska et al., 2018). As a result, a culture now clearly focusses on ensuring their engagement, with a plethora of publications, evaluations, frameworks and funding stipulations (Greenhalgh, 2019; Hickey et al., 2018; Manafo et al., 2018; Miller et al., 2018; PCORI, 2016) specifically dedicated to supporting and advancing this practice. Examples of good practice such as Goldsmith et al.'s (2019) recent article in which methodological and practical decisions taken with research users were evaluatively reasoned and justified, offer both transparency and an evidence base for developing a culture of knowledge co-production with this subgroup and could be replicated with practitioners to share similar practices and overcome the reporting deficit in this area (*removed for peer review purposes*). Contributors to our concept development likened the concept of Researcher Practitioner Engagement to PPI and drew comparisons to the benefits that could be realised through a similar conceptualisation dedicated solely to frontline practitioners.

Strengths and limitations

A major strength of this work is the novelty of the pragmatic approach that was taken to adapt Schwartz-Barcott and Kim's (2000) hybrid model of concept development, and the steps taken to ensure the trustworthiness of the process. Presenting the tentative findings of the theoretical phase to participants provided a consistent and systematic framework to structure focus group discussions and ensured all elements which had emerged from the theoretical phase were given consideration from an experiential perspective. Seeking additional views of researchers inductively using a triangulation group provided clarity, confirmation and trustworthiness by providing both perspectives and language unprejudiced by the findings of the theoretical phase. No component from the theoretical phase was retained in its original format, demonstrating the importance of this experiential data in refining the concept to its most salient elements. Experiences were drawn on from across disciplines and academic levels. Although practitioners from nursing and midwifery disciplines could not be recruited, both professions were represented by academic researchers. Due to unforeseen circumstances, two of the scheduled groups became dyads when only two participants were able to attend. However, this did not appear to have any bearing on the data collection process or the quality of the data collected and has been evaluatively reported elsewhere (*removed for peer review purposes*).

Conclusion

The engagement of frontline practitioners in the production of research derived knowledge can contribute to developing evidence which is relevant to clinical practice. Engagement can take varying forms, spanning participatory approaches which afford the practitioner an equal role in co-producing the evidence alongside the researcher, to involving them in the execution of assigned study tasks. Regardless of the approach, ensuring practitioner's clinical perspectives are valued when designing a study protocol, could enhance study activities, contributing to a balance between rigour and relevance. Researcher Practitioner Engagement labels and defines a specific form of engagement of frontline practitioners by academic researchers who conduct healthcare studies. Developed in the context of nursing, midwifery and therapy professions, its attributes clearly outline the factors which need to be in place to facilitate this engagement form. The attributes ensure frontline practitioners' clinical perspectives are valued in the knowledge production process to influence the clinical relevance of a study and its outcomes whilst providing experiential development opportunities for practitioners and opportunities to develop research capacity. As opposed to reinforcing an academic led dissemination model or the divide which is often perceived to exist between these two communities (Wehrens, 2014), our concept and the tentative definition offered provide a springboard to encourage researchers within this context to actively and transparently demonstrate that current clinical knowledge has contributed to the knowledge production process. It legitimises a form of engagement which empowers practitioners to contribute to the production of the knowledge which underpins their practice within the realities of a clinical workload whilst meeting the professional requirements to engage in and with research as evidence informed practitioners (Nursing and Midwifery Council, 2015; Health and Care Professions Council, 2018). In addition, the development of collaborative relationships is facilitated, helping to develop a culture that works towards achieving co-productive ideals. By proposing this concept and its tentative definition, we hope to open discussion on the potential of this new concept and its contribution to healthcare research whilst offering a consistent term to overcome current limitations in the reporting of engagement practices.

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4.8 Summary

Within this chapter and an academic paper which has been submitted to a journal for editorial consideration, the findings of Phase 1 of this study have been presented. Progression of the concept development has been shown from the findings of the theoretical phase, the influence of the fieldwork data and the final outcome derived from the analytical phase. As shown, these concept components have been used to devise the definition of Researcher Practitioner Engagement and inform the contents of a conceptual model. The characteristics of the concept were also used to extend the theoretical framework of this study, and so have illustrated the key differences between three forms of practitioner engagement by academic researchers. As described in chapter three, a tool was subsequently developed by building on these findings to investigate the extent of the presence of the concept components of Researcher Practitioner Engagement amongst researchers and practitioners with engagement experience. The findings of this second phase (Phase 2) are reported in the following chapter.

CHAPTER FIVE - FINDINGS PHASE 2 [QUANTITATIVE]

5.1 Introduction

This chapter reports the findings of the quantitative phase (Phase 2) of this mixed methods study. The objective was to establish the presence of the components of the concept ‘Researcher Practitioner Engagement’ in cases of practitioner engagement by academic researchers in the United Kingdom (UK). As outlined in chapter three, a survey method was used to address this objective. An online questionnaire was developed from the outcome of Phase 1 (Appendix 20) to establish the extent to which each of the concept components had been experienced during engagement within one study, and with the one practitioner with whom the researcher perceived they had the greatest level of engagement. The survey was designed to capture quantitative data from academic researchers and nursing, midwifery and therapy practitioners from across the UK and so was disseminated to both groups to encourage those with experience of engagement to take part.

In the first section of this chapter, an overview of those who completed the questionnaire is presented, followed by reporting of the extent to which each of the concept components of ‘Researcher Practitioner Engagement’ was reported to have been experienced by respondents who met the study inclusion criteria. Analysis of the survey data involved ascertaining the number of responses to pre-determined answers which enabled the frequency of the presence of each concept component across the cases of engagement to be presented. Within this chapter, a descriptive overview of the findings is presented.

5.2 Overview of survey responses

During the main survey data collection period, a total of 34 responses were recorded from frontline practitioners (n=4), academic researchers (n=26) and four who met neither of these criteria. Once further exclusion criteria were applied, sixteen responses from academic researchers and one from a frontline practitioner were suitable for analysis. Reasons for exclusion can be seen in Figure 5.1, with shaded boxes indicating those excluded as each of the criterion was applied.

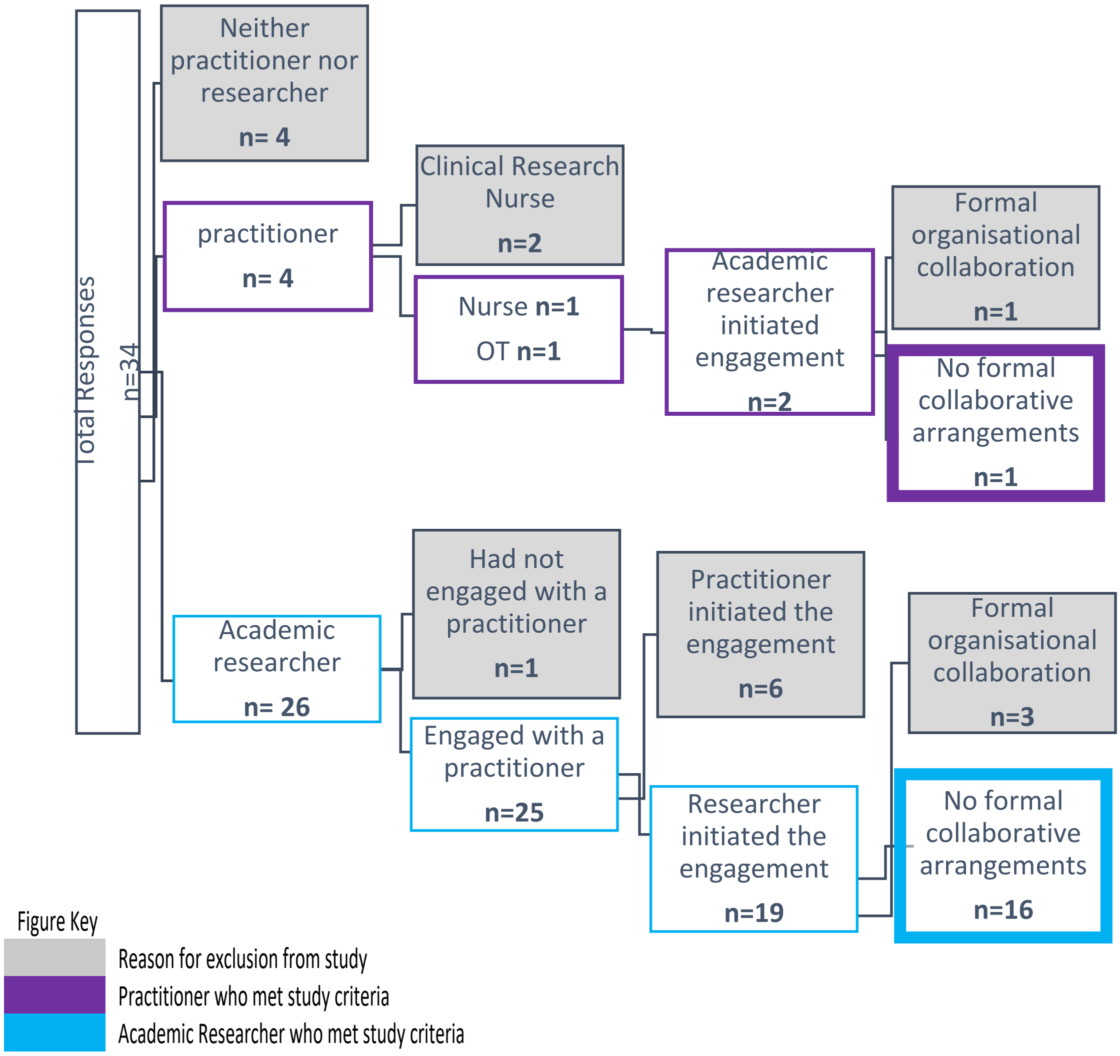

Figure 5.1 Survey responses applied to criteria inclusion and exclusion criteria

5.2.1 Academic researchers

Of the 26 researchers who completed the survey, ten were excluded (Figure 5.1). Four researchers had completed the pilot survey, all of whom met the study criteria, therefore, as minimal changes had been made to the tool following the pilot, these data were combined to give a total sample of 20 researchers. Table 5.1 summarises these academic researchers' characteristics, obtained in section A of the questionnaire, in relation to their role and the number of studies in which they had engaged with a practitioner over the preceding three years. Responses were received from all four regions of the United Kingdom (UK) with the majority based in England (n=10). A range of roles within academia were represented, with the majority at Professor or Associate Professor level (n=9). This was most likely related to the recruitment strategy which included direct invitations to research centre leads within UK universities, many of which are at professorial level. The majority of researchers were based in a university setting only (n=17) and three were split across a university and clinical setting, though solely employed by the Higher Education Institute. Experience of engaging a practitioner in studies over the preceding three years ranged from engagement in one study (n=6) to more than ten studies (n=2).

Table 5.1 Characteristics of survey respondents (Academic Researchers n=20)

	Survey (n=16)	Pilot (n=4)	Total (n=20)
Location			
England	10	0	**10**
Northern Ireland	3	4	**7**
Wales	2	0	**2**
Scotland	1	0	**1**
Academic Role			
Professor/Associate Professor	9	0	**9**
Reader/Lecturer	3	1	**4**
Research Fellow/Research Associate	3	1	**4**
PhD Researcher (Full time)	1	1	**2**
Clinical Academic	0	1	**1**
Work Base			
University only	13	4	**17**
Split across university and clinical area	3	0	**3**
No. of studies in which practitioner engagement has taken place over the past 3 years			
1	4	2	**6**
2	2	1	**3**
3	5	0	**5**
4	1	0	**1**
5	2	1	**3**
6-9	0	0	**0**
10+	2	0	**2**

5.2.2 Practitioners

Of the four questionnaires completed by practitioners, two were clinical research nurses and one had been engaged by a researcher as part of a formal collaborative programme. Therefore, just one practitioner met the study criteria and provided data suitable for analysis. Although three practitioners completed the pilot survey, their data could not be used; one had not been engaged in a study in the preceding three years; one was a research nurse and; the third indicated engagement was initiated by a practitioner as opposed to the academic researcher in the instance to which their survey responses related.

Table 5.2 Characteristics of survey respondents (Practitioner n=1)

Location	Discipline	No. of studies in which engaged by an academic researcher over the past 3 years
England	Nurse	1

5.3 Overview of the studies in which engagement was reported

5.3.1 Academic researchers

To complete section B and C of the questionnaire, researchers were asked to base their response on one study in which they had engaged with a practitioner which was complete or near completion, and within this study, the practitioner with whom they perceived they had had the greatest level of engagement. A summary of the characteristics of these studies (Table 5.3) shows that the majority engaged nursing practitioners (n=14). Most of the studies were still ongoing (n=12), ranging from being in the planning stages (n=1) through to dissemination (n=2). In the main, researchers had direct contact with the practitioner (n=16) and in four cases, engagement was via other personnel; a Head of the Research and Development (R&D) Department within the practitioner’s organisation, a professional practice nurse, a clinical manager and a research lead. In half of cases, engagement had occurred as the practitioner was known to the researcher from an existing relationship from a previous study.

Table 5.3 Overview of studies in which academic researchers engaged practitioners

	Survey (n=16)	Pilot (n=4)	Total (n=20)
Disciplines engaged in study*			
Nursing	12	2	**14**
Occupational Therapy	2	1	**3**
Physiotherapy	1	2	**3**
Speech and Language Therapy	1	1	**2**
Midwifery	0	0	**0**
*One researcher had engaged practitioners from occupational therapy, physiotherapy and speech therapy in one study			
Study status			
Ongoing	11	1 (stage of study not provided)	**12**
Completed	5	3	**8**
Ongoing studies (n=11): stage at time of survey completion			
Preparing for dissemination	2		
Data analysis	3		
Data collection	4		
Recruitment	1		
Planning	1		
Direct contact by academic researcher throughout study			
With practitioner	14	2	**16**
With link person	2	2	**4**
Method of initiation of practitioner engagement by academic researcher			
Existing relationship∞	8	2	**10**
Approached at a conference	1	0	**1**
Approached via professional body	1	0	**1**
Via a recommendation	3	0	**3**
Approached a known local expert	1	0	**1**
Practitioners invited to a workshop	1	0	**1**
Via ‘professional and practice development team’	1	0	**1**
∞Two respondents indicated existing relationship but also that the practitioner was recommended			

5.3.2 Practitioner

The practitioner indicated that they had been approached by the academic researcher via the Research and Development Department within their own organisation. The status of the study was ongoing and at the time of questionnaire completion was at the stage of data analysis.

5.4 Activities in which practitioners were engaged by academic researchers

5.4.1 Academic researchers

Researchers were asked to identify the activities in which they had engaged the practitioner across the research process (Table 5.4). This ranged from researchers who had engaged with a practitioner in two (n=3) to more than ten activities (n=4), with one researcher engaging a practitioner in 15 study activities. Most frequently, practitioners were engaged in three to five study activities (n=8). Practitioners were most often engaged in participant recruitment (n=15), protocol design (n=11), intervention delivery (n=10) and obtaining funding (n=10). Activities in which engagement was least reported were reviewing existing evidence (n=4), topic prioritisation (n=6) and data collection (n=7).

5.4.2 Practitioner

The practitioner reported that he/she had only been engaged in participant recruitment.

5.4.3 Use of theory to guide engagement

Fourteen researchers stated that no theory had been used to guide practitioner engagement in this study. Of the six who indicated use of theory, this was co-production (n=4), collaborative research (n=1) or realist methodology (n=1). Analysis of the specific cases in which theory was used to guide practitioner engagement showed variation in the number and combination of study activities in which practitioners were engaged (Table 5.5).

Table 5.4 Study activities in which the academic researcher engaged the practitioner

	Survey (n=16)	**Pilot (n=4)**	**Total (n=20)**
No. of study activities			
1	0	0	**0**
2	3	0	**3**
3-5	4	4	**8**
6-9	5	0	**5**
10+	4	0	**4**
Study activity	**Survey (n=16)**	**Pilot (n=4)**	**Total (n=20)**
Identification of study topic	7	1	**8**
Prioritisation of study topic	5	1	**6**
Funding	10	0	**10**
Developing the study protocol	10	1	**11**
Reviewing existing evidence	4	0	**4**
Decisions on methods	7	1	**8**
Intervention design	7	2	**9**
Study approvals	8	1	**9**
Recruitment	12	3	**15**
Intervention delivery	9	1	**10**
Data collection	5	2	**7**
Analysis	7	1	**8**
Report writing	6	0	**6**
Dissemination of findings	9	0	**9**
Implementation of findings	7	1	**8**

Table 5.5 Details of engagement in cases in which theory was used to guide engagement

Survey Respondent	Practitioner engaged in protocol design	Activities in which practitioner was engaged by researcher	
		No. of activities	*Study activities*
Co-production			
RS9	No	2	Prioritisation of topic, identification of research topic
RS23	Yes	12	Identification of research topic, funding, protocol development, decisions regarding methods, study approvals, intervention design, recruitment, data analysis, report writing, dissemination, implementation
RS26	Yes	6	Study funding, decisions regarding methods, study approvals, recruitment, intervention delivery, data collection
Pilot 4	No	3	Prioritisation of topic, identifying research topic, intervention design
Collaborative Research			
RS17	Yes	5	Funding, decisions regarding methods, recruitment, data collection, implementation of findings
Realist Methods			
R25	No	5	Funding, study approvals, recruitment, data collection, dissemination

5.5 The extent to which concept attributes were present in cases of engagement reported by survey respondents

Survey respondents (academic researchers and practitioner) indicated on a five-point Likert scale ranging from a definite affirmative response to a definitive negative response with a neutral option, the extent of the presence of each of the concept attributes within this engagement experience. The number of responses in relation to each attribute was ascertained across the 21 cases of engagement reported across survey responses.

5.5.1 Attribute 1: Engagement in study activities varies but should always occur in protocol design and dissemination stages

Engagement in study activities varies

Evidence of the presence of this attribute was established by the variability across the 21 cases of the number and combination of study activities in which a practitioner was engaged (section 5.4).

Engagement in protocol design

Practitioners were reported to have been engaged in protocol development in 11 cases. Six researchers and the practitioner stated it was *'somewhat true'* that the practitioner had been engaged at a stage which was too late to inform the study protocol whilst the remainder reported this was not the case.

Engagement in study dissemination

Nine researchers reported engaging a practitioner in study dissemination (section 5.4). However, in later, more specific questioning about dissemination activities, it was indicated that ten practitioners had co-authored a paper, nine had disseminated at a local event, and a further four disseminated at a national or international event. Two researchers indicated that the practitioner had been offered the opportunity to co-author a paper but had been unable to take up this opportunity whilst one practitioner had co-authored a poster and paper that had then been presented by the researcher at an international event. As twelve of the studies were ongoing, it is feasible that practitioners within these studies may be engaged in future dissemination, however, plans for future activity was not investigated within the survey.

At the time of questionnaire completion, three researchers indicated that the practitioner had been engaged in both protocol design and study dissemination. The practitioner respondent had only been engaged in participant recruitment, however, as the study was at the analysis stage, he/she could be engaged in dissemination.

5.5.2 Attribute 2: Practitioners' perspectives, skills and/or knowledge influence the research process from the formative stages

Clinical perspectives are valued in the formative stages of a study

Eleven researchers had sought the clinical perspectives of the practitioner who had then been engaged in subsequent stages of the study during the design of the study protocol. A further four researchers had sought clinical perspectives from a different practitioner than the practitioner who was subsequently engaged in study activities on which the questionnaire responses were based. Four researchers confirmed that the clinical perspectives of a practitioner had not been sought before or during the protocol design.

Eleven researchers reported it was '*definitly true'* that a practitioner's clinical perspectives had influenced the design of the study protocol, whilst five considered this to be '*somewhat true'.* The practitioner respondent reported that their clinical perspectives had not been sought before or during the design of the research protocol, but that the researchers had obtained a clinical perspective from another practitioner.

Engagement in other formative activities included identification of the study topic (n=8), obtaining funding (n=10), and reviewing existing evidence (n=4).

Practitioner’s clinical perspectives influence study activities

In addition to those who reported practitioner’s influences on the protocol design, most researchers reported that the practitioner’s clinical perspectives influenced research activities during the study (‘*definitly true’* n=10; *‘somewhat true’* n=7). Practitioners were reported to most commonly have influenced the *‘identification of participants’* (n=15) and *‘recruitment of participants’* (n=14), followed by ‘*delivery of the study intervention’* (n=12) and ‘*data collection’* (n=10). Researchers indicated no positive influence on ‘*participant documentation’* (n=8) or ‘*choice of outcomes measures*’ (n=8). ‘*Data analysis and interpretation’* was reported to be influenced by practitioners in just two cases and ‘*choice of outcome measures*’ in five cases (Figure 5.2). The practitioner respondent felt his/her engagement in the study had influenced ‘*study funding’*, ‘*participant identification’*, ‘*participant recruitment’* and ‘*data collection’* and *‘to some extent* had influenced the ‘*participant documentation’*, ‘*dissemination of the study’*, ‘*use of the study findings in practice*’ and the ‘*relevance of the study findings to practice’*. The practitioner did not think his/her engagement in this study had influenced the ‘*study’s feasibility’*, ‘*design*’ or ‘*delivery of the study intervention’*, ‘*choice of outcome measures’*, ‘*data collection tools’*, ‘*analysis or interpretation of the data’* or the ‘*overall outcome of the study’*.

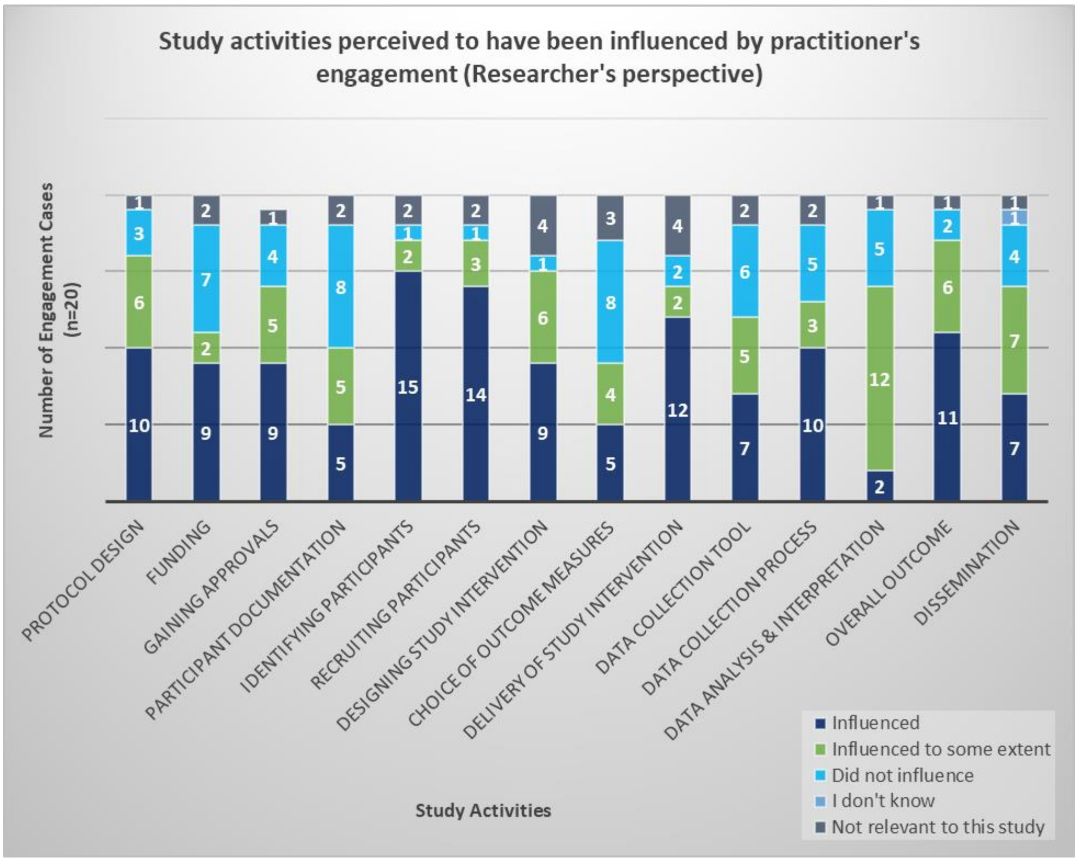

Figure 5.2: Identification by academic researchers of study activities influenced by a practitioner's engagement in the study

Practitioner's clinical perspectives are equitable to researcher's perspectives in the study activities in which the practitioner is engaged

One researcher reported that practitioner's clinical perspectives were *'always'* equitable to the researcher's. Nine researchers stated the practitioner's clinical perspectives were equitable to the researcher's perspective *'most of the time'*, a further eight '*some of the time'* and two researchers were '*unsure'*. When asked if they perceived that having a clinical background meant that the practitioner's clinical perspectives, knowledge or skills were not always required, almost half of researchers (n=9) felt this was *'somewhat true'* with the remaining responses being split across the *'not true'* (n=5) and *'definitely not true'* (n=4) categories and two researchers *'unsure'*. In the majority of cases, the researchers stated that they did not feel like they were *'using the practitioner*' (n=17). Three researchers reported they felt like they were '*using the practitioner*' *'to some extent'*. In the main survey, 11 of the 16 researchers considered the practitioner a member of the research team and two researchers reported this was not the case. This question was added after the pilot. The practitioner respondent believed that his/her clinical perspectives were equitable to the researcher's perspectives *'most of the time'*. The practitioner reported they did not feel like a member of the research team but did not feel like they were '*being used'* by the researcher.

5.5.3 Attribute 3: Mutually beneficial

When asked if they found engaging a practitioner in this study beneficial for themselves and/or the study, the majority (n=19) of researchers indicated that this was *'definitely true'* and one researcher *'somewhat true'*. Researchers perceived that it was *'definitely true'* that engagement in the study had been beneficial for the practitioner in 13 cases and *'somewhat true'* in a further five. Two researchers stated that they did not know if the practitioner had benefited from the engagement.

The practitioner respondent indicated that it was *'somewhat true'* that he/she had found engaging in this study beneficial and *'definitely true'* that he/she had perceived their engagement to be beneficial to the researcher.

5.5.4 Attribute 4: Open dialogue which facilitates practitioners to clinically inform problem solving and decision making in relation to relevant study activities

Clinically informed problem solving in relevant study activities

Four researcher respondents indicated that they had problem solved around study activities together with the practitioner '*all of the time'*, seven indicated that this occurred *'most of the time*' and eight '*some of the time'*. Of the 20 researcher respondents, 15 indicated that the practitioner had '*never'* problem solved around study activities without the researcher's input. Nine researchers indicated that they had '*never'* problem solved without the practitioner's input.

The practitioner respondent stated that if problems arose during the study, they and the researcher problem solved together using their respective clinical and research knowledge *'some of the time'*. The practitioner also indicated that if problems arose during the study, they *'never'* problem solved without researcher input but that the researcher solved problems which arose without the practitioner's input *'some of the time'*.

Clinically informed decision making in relevant study activities

Although one researcher respondent was unsure, all others indicated that they made decisions with the practitioner during the study *'always'* (n=4), *'most of the time'* (n=6) or *'some of the time'* (n=9). Nine reported that they '*never*' made decisions without practitioner input. Practitioners were reported as *'never'* making decisions without researcher input in 18 of the 20 cases. Researchers reported that, when a decision needed to be made, it had *'always'* been made by the party with the most relevant knowledge or perspectives (n=3) or made by the most releveant party *'most of the time'* (n=7) or *'some of the time'* (n=5). Five indicated they were *'unsure'* if decsions had been made by the party with the most relevent knowledge or perspective.

The practitioner respondent indicated that when decisions needed to be made during the course of the study, these were *'never'* made using respective clinical and research knowledge and the researcher *'always'* made decisions during the study without seeking the practitioner's clinical perspective. The practitioner *'never'* made decisions during the study without seeking input from the researcher and reported that when decisions needed to be made during the course of the study, they were made by the party with the most relevant skills '*some of the time'*.

Open dialogue

Researchers reported that they encouraged the practitioner to contact them *'always'* (n=15) or *'most of the time'* (n=5). The extent to which practitioners contacted the researcher varied with cases when practitioners *'never'* contacted the researcher (n=2). Half of researchers reported having a presence in the clinical environment *'some of the time'*, although five indicated *'never'* having a presence. The practitioner respondent stated that the researcher was *'always'* accessible, that he/she was *'always'* encouraged to contact the researcher(s) at any point with concerns or questions in relation to study activities and that he/she *'always'* felt comfortable doing so. However, he/she reported that the researcher(s) *'never'* had a presence in the clinical environment during the study.

5.6 The extent to which concept antecedents were present in cases of engagement

5.6.1 Antecedent 1: Common vested interest in a study topic and its outcomes

Study is meaningful to practitioner's clinical practice

The majority of researchers believed it was '*definitely true'* that the research question was meaningful to the practitioner's clinical practice (n=16) and the remaining four believed this was *'somewhat true'*. The practitioner also reported that it was '*definitely true'* that the research question was meaningful to his/her clinical practice.

Practitioner sees benefits for patients

Although two researchers were not aware of the practitioners' views on the benefit of the study for their patients, eleven perceived that understanding of patient benefit had motivated practitioners to engage in the study from the outset, whilst seven perceived realisation of patient benefit developed for practitioners during the early stages of engaging in the study. The practitioner respondent indicated that it was the benefit of this study for his/her patient or service that had motivated their engagement.

Researcher and practitioner share an understanding of the purpose of the study Twelve researchers reported that it was '*definitely true'* that the practitioner and themselves had the same understanding of the purpose of the study, with seven believing this to be '*somewhat true'* and one *'unsure'*. The practitioner respondent reported that they believed it was '*definitely true'* that they shared understanding of the purpose of the study with the researcher.

5.6.2 Antecedent 2: Initiation and forming of a collaborative relationship

Half of researchers (n=10) had an established relationship with the practitioner from engaging on a previous study. Seven researchers reported that they developed a relationship with the practitioner whilst working on the study in which this engagement took place. The practitioner respondent also stated that they had developed a relationship with the researcher during the process of engaging in this study.

5.6.3 Antecedent 3: Organisational culture of integrated research and practice

Just two researchers perceived it to be *'definitely true'* that the practitioner's organisation had a strong research culture, with four stating it was *'not true'* (n=2) or *'definitely not true'* (n=2). Researchers perceived it to be *'definitely true'* (n=7) or '*somewhat true'* (n=7) that the support from the practitioner's organisation had facilitated their engagement, although three reported this was '*not true'* and two were *'unsure'*. Similarly, researchers reported it to be *'definitely true'* (n=9) or '*somewhat true'* (n=5) that the support from the practitioner's manager had facilitated their engagement, with three reporting this as '*not true'* and three *'unsure'*. Finally, the majority reported that it was *'somewhat true'* that the practitioner's peers had facilitated their engagement in the study, with just one researcher perceiving it to be *'definitely true'*. Six were *'unsure'* and one researcher reported this as *'not true'*.

In the main, researchers did not report lack of support as limiting engagement with most stating it was '*definitely not true'*, or '*not true'* that lack of organisational (n=11), managerial (n=12) or peer support (n=10) had limited engagement in the study. Often, however, researchers were '*unsure'*: organisational (n=5), management (n=5) and peers (n=8). The practitioner respondent reported that it was *'somewhat true'* that their organisation had a strong research culture and perceived that it was *'definitely true'* that organisational, managerial and peer support had facilitated their engagement in the study. In support of this, the practitioner indicated that it was '*definitely not true'* that a lack of support from any of these parties had limited engagement in the study.

5.6.4 Antecedent 4: Realising and addressing challenges within clinical context that could impact on researcher practitioner engagement

Consideration of the clinical setting

As reported in section 5.6.4 (attribute 4; open dialogue), half of researchers reported having a presence in the clinical environment *'some of the time'*, and five indicated *'never'* having a presence. When asked if they understood the demands of the clinical setting, eight of the researchers stated this was '*definitely true'* and twelve '*somewhat true'*. Nine researchers felt that it was *'true'* or *'somewhat true'* that challenges within the clinical setting had limited practitioner engagement with nearly all (n=18) indicating that adjustments were made to the protocol to overcome these challenges. However, half of researchers (n=10) did not think that greater consideration of these challenges at the beginning of the study would have enhanced the practitioner's ability to engage.

The practitioner respondent reported it was '*definitely not true'* that the researcher who had engaged them in the study had spent time in the clinical setting. The practitioner thought it *'somewhat true'* that the researcher understood the demands of the clinical setting and how these might impact on their engagement in the study. However, the practitioner thought it was *'not true'* that challenges within the clinical setting had limited his/her ability to engage with this study nor that greater consideration of potential challenges within the clinical setting at the beginning of the study could have enhanced their ability to engage.

Practitioner's time

Researchers were sometimes *'unsure'* if practitioners had been '*allocated time within their workload'* (n=4) or had *'used their own personal time'* (n=5) to engage in the study. In some cases, it was *'definitely true'* (n=4) or '*somewhat true'* (n=8) that the practitioner had been *'allocated time within their workload'* to engage in the study, though in four cases this was *'not true'*. Although three researchers reported that it was *'not true'* that the practitioner had used '*their own personal time outside of usual working hours'* to engage in the study, it was identified as *'definitely true'* (n=4) or '*somewhat true'* (n=7) by other researcher respondents. Just one researcher stated it was *'definitely true'* that '*backfill money had been used'* to cover some of the practitioner's clinical duties to enable them to engage in the study with a further three indicating this was '*somewhat true'*. More often it was stated that it was *'definitely not true'* (n=9) or *'not true'* (n=6) that '*backfill money had been used'.*

The practitioner respondent indicated it was *'not true'* that he/she had been *'allocated time within workload'* to engage in this study, *'not true'* that '*backfill money was available'*, and *'not true'* she/he had been '*seconded from clinical role'*. The practitioner also stated that it was *'not true'* that they had '*used own personal time'* to engage in the study. He/she identified that it was *'somewhat true'* that the research activity had become *'part of their clinical workload*' and *'somewhat true'* that this activity had felt like *'something extra I had to do on top of my usual workload'*.

5.7 The extent to which concept consequences were present in cases of engagement

5.7.1 Consequence 1: Research capacity building

Individual capacity building

The practitioner respondent reported that it was *'somewhat true'* that engagement in this study had '*motivated him/her to engage in a subsequent study'*, but that it was *'not true'* that it encouraged them to engage in other research related activities such as carry out their own research or enrol on postgraduate study. This practitioner identified that it was *'definitely true'* that engaging in the study had '*developed awareness of how research informs practice'* and '*understanding of research generally'*. It was '*somewhat true'* that engaging had *'developed specific research skills'*, '*ability to source research evidence relevant to clinical practice', 'improve ability to evaluate published research'* and *'ability to apply research evidence in clinical practice'.* The practitioner reported it was *'definitely true'* that engaging in this study had resulted in a number of consequences in relation to his/her professional development and had used the experience from this engagement to demonstrate professional development as part of a professional validation process. Consequences included helping to '*reflect on elements of practice', 'gain new knowledge in relation to clinical practice', 'become more questioning of elements of practice', 'keep up to date with wider researcher evidence in the clinical area'* and '*develop as an evidence-based practitioner'*. It was '*somewhat true'* that he/she '*felt like an expert in their clinical area'* as a result. Although this practitioner had not been involved in any dissemination activities, and so not been able to develop dissemination skills, researchers reported that practitioners had *'co-authored a paper'* (n=10), '*disseminated at a local event'* (n=9), or ‘’*disseminated at a national or international event’* (n=4). Two researchers indicated that the practitioner had been offered the opportunity to co-author a paper but had been unable to take up this opportunity whilst one practitioner had co-authored a poster and paper that had been presented by the researcher at an international event.

Team capacity building

The practitioner was *‘unsure’* if their engagement had subsequently *‘motivated colleagues to engage in a study’*. In relation to their team or department, the practitioner indicated that it was *‘definitely true’* that engagement in this study had both *‘contributed to developing a research culture within the team’, ‘gained recognition for the team’* and ‘*developed a research culture that would attract others to work within the team*’. The practitioner shared learning from the study with colleagues and reported it was *‘definitely true’* that ‘*use of research evidence within the team improved’* as a result of the engagement in this study. Educational workshops were not offered by the researchers to this practitioner or their team.

Researcher development

More than half of the researchers reported that it was *‘definitely true’* (n=13) that experience of engaging a practitioner in this study had motivated them to engage a practitioner in a subsequent study, with no researcher stating that this was not the case, nor that it had discouraged them from future engagement activity. Although researchers were mostly ‘*unsure’* (n=11) if their experiences had encouraged colleagues to engage practitioners, some reported that this was *‘definitely true’* (n=2) or *‘somewhat true’* (n=7). Researchers reported several areas of development as a result of engaging with a practitioner in this study (Figure 5.3). The most frequently reported was ‘*developed understanding of the clinical area’*, with nearly all indicating it was *‘definitely true’* (n=15) or *‘somewhat true’* (n=4) that this consequence had been experienced (Figure 5.3).

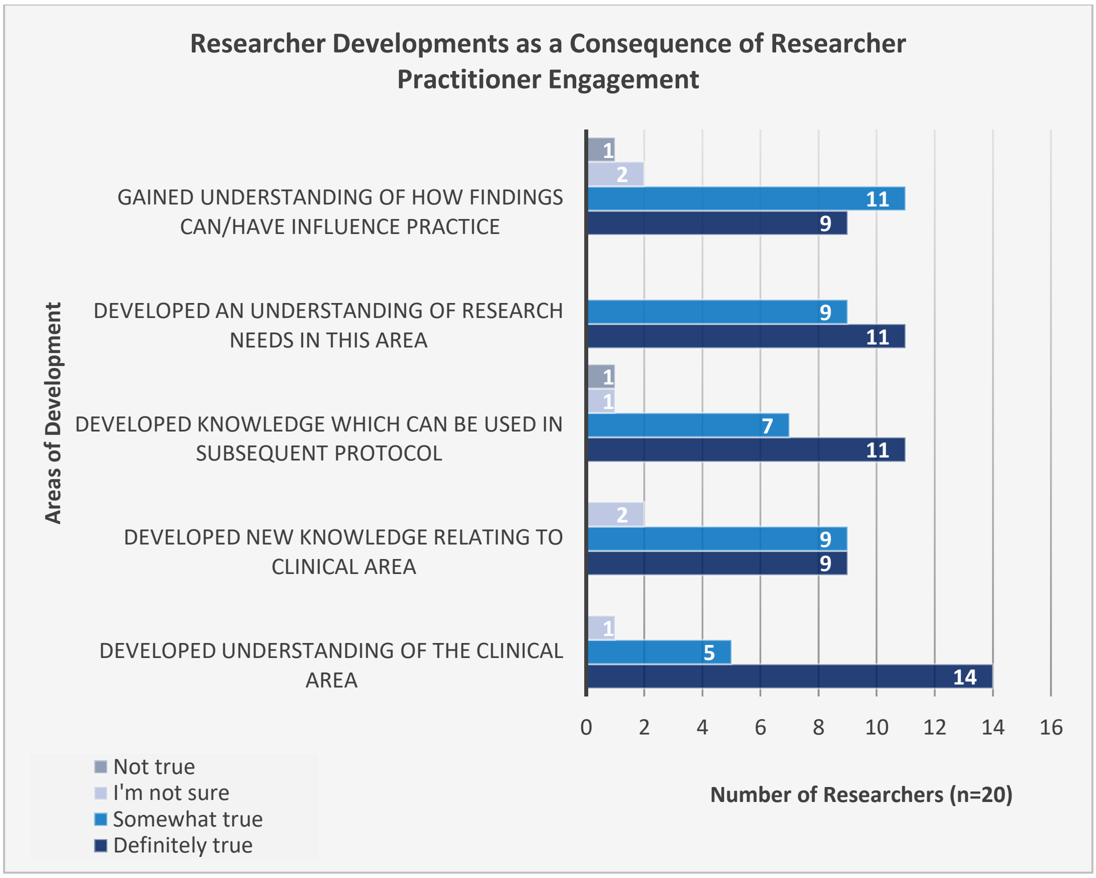

Figure 5.3: Areas of their own development reported by academic researchers who engaged practitioners in a study (n=20)

5.7.2 Consequence 2: Practice development

To gauge a general view, researchers in the main survey (n=16) were asked if they had perceived any element of the study to have influenced practitioners’ actions or decision making in their clinical practice. Although two did not respond, six reported that it was *‘definitely true’*, seven thought this was the case ‘*to some extent*’ and one responded ‘*no’*. The practitioner respondent reported it was *‘definitely true’* that engagement in this study had contributed towards ‘*developing expertise’* in his/her field and *‘somewhat true’* that engagement had allowed him/her to *‘improve their clinical practice’*. However, it was ‘*not true’* that ‘*changes had been made to practice’* as a result, and he/she was *‘unsure’* if it had ‘*confirmed the suitability of the care already* *provided'*. The practitioner was *'unsure'* if engaging had developed his/her understanding of a clinical condition, intervention or assessment, or increased his/her confidence in their role as a practitioner. However, the study in which the practitioner was engaged was at the data analysis stage at the time of questionnaire completion, which could account for these *'unsure'* responses.

5.7.3 Consequence 3: Improves clinical relevance of a study and its findings

Researchers were asked to identify the extent to which they perceived the practitioner's engagement had contributed to significance of a study and its outcomes. Most often researchers reported that it was *'definitely true'* that practitioner engagement had *'added value to the study'* (n=18), *'contributed to impact'* (n=14) and *'increased the study's relevance'* (n=13) (Figure 5.4). More than half of the researchers also reported that it was *'definitely true'* that engaging the practitioner in the study had '*contributed to the feasibility'* (n=12) and '*improved internal validity'* (n=11). Researchers were less inclined to report that the practitioner engagement had *'improved overall methodological quality'*, with six reporting this to be *'definitely true'*, a further six *'somewhat true'* but eight either *'unsure'* (n=6) or reporting this to be '*not true'* (n=2). The practitioner felt that he/she had added value to the study '*to some extent'.*

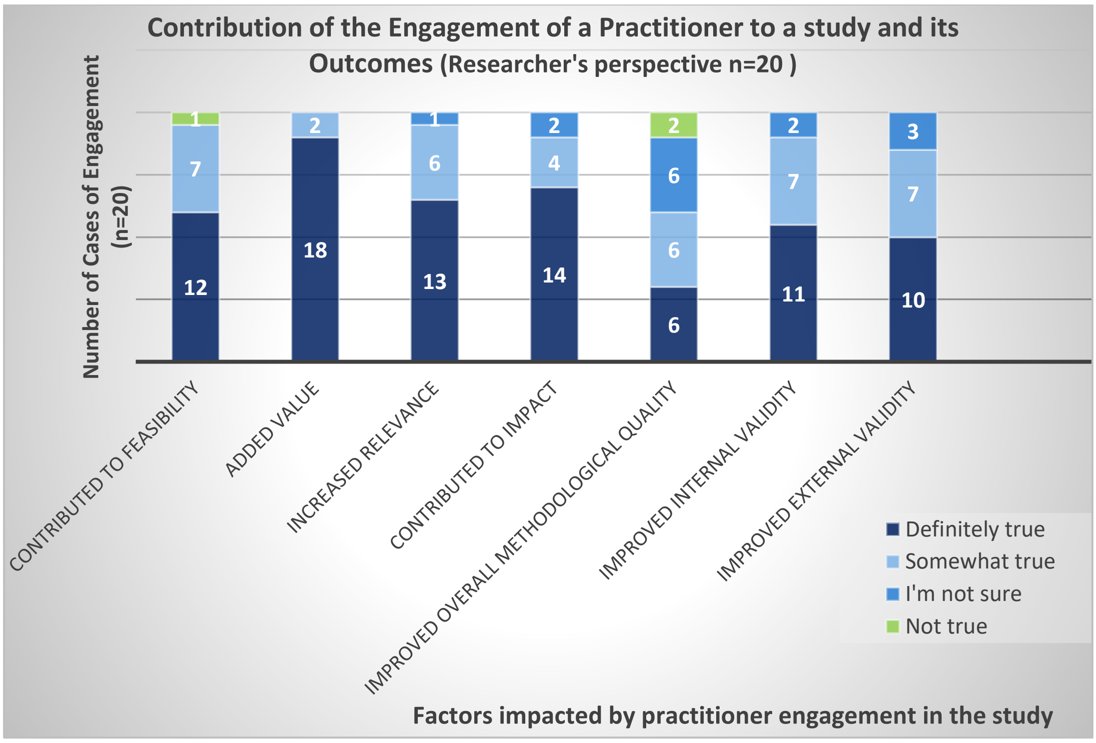

Figure 5.4: Factors impacted by the engagement of the practitioner in the study (from the researchers' perspective)

Researchers were also asked if they perceived that practitioner engagement had increased the likelihood of the study findings being used in both local and wider practice. Sixteen researchers perceived that it was *'definitely true'* (n=11) or '*somewhat true' (n=5)* that practitioner engagement had influenced the application of findings locally. Eight researchers perceived it was *'definitely true'* that engagement had *'increased likelihood of the application of findings in wider practice'* and a further seven *'somewhat true'*. The remaining researchers were *'unsure'* if practitioner engagement had *'influenced the likelihood of application of study findings in local practice'* (n=4) or wider (n=5).

The majority of researchers in the main survey (n=16) and the practitioner indicated that it was '*definitely true'* that the practitioner's role in the study had enabled them to *'contribute to the production of knowledge'* (n=10). Five researchers thought this was achieved *'to some extent'* and one did not respond.

5.8 Measuring Researcher Practitioner Engagement

Researchers were asked if they had used any methods to measure or demonstrate the consequences of practitioner engagement. Six indicated that impact on clinical relevance had ‘*not been measured’* and of those who indicated methods had been used, these were reported as *‘reflective notes’* (n=5), ‘*detailed in a report to the study funders’* (n=4) and a further four reported that they had *‘carried out additional evaluative work’,* however, further details surrounding this were not sought via the survey. When asked if any influence on the research process had been measured or demonstrated, again six said this was ‘*not measured’*, whilst others reported use of ‘*reflective notes’* (n=6), ‘*detailed in a report to the study funders’* (n=7) and one had *‘carried out additional evaluative work’.* Eleven researchers did not measure or demonstrate any impact on their professional development, whilst others used *‘reflective notes’*, (n=6) and/or ‘*detailed in a report to the study funders’* (n=1).

5.9 The extent to which concept components were present in cases of engagement that could align with the engagement paradigm or hired hand approach

In keeping with the theoretical framework of this study, cases of engagement reported via the survey were analysed to identify if any could be considered to align with the engagement paradigm or the hired hand approach.

5.9.1 Cases of engagement that could align with the engagement paradigm

As a key characteristic of the engagement paradigm is that practitioners should be engaged in all or most study activities (Table 2.6), the four cases in which the practitioner was reported to have been engaged in ten or more study activities were extracted for analysis. Doing so, enabled the responses of these four academic researchers to be considered in light of the defining characteristics of the engagement paradigm. Practitioners had been engaged in 10 (RS24), 12 (RS23), 13 (RS12) and 15 (RS20) study activities, including protocol design and study dissemination in all cases. All four researchers reported it was *'definitely true'* that '*the practitioner's clinical perspectives, knowledge and/or skills informed or influenced the design of the study protocol'*. Three also indicated that it was *'definitely true'* that *'the practitioner's clinical perspectives, knowledge and/or skills informed or influenced research activities during the course of the study'* with the fourth indicating this was *'somewhat true'.*

Just one of these four researchers (RS20) indicated that the '*Practitioner's clinical perspectives are equitable to researcher's perspectives in the study activities in which the practitioner is engaged' 'all of the time'* with others reporting this as *'most of the time'* (RS12; RS24) or *'some of the time'* (RS23). Similarly, just one researcher (RS12) indicated that they '*always'* engaged the practitioner in problem solving and decision making in relation to study activities. More likely was that practitioners were engaged in problem solving in relation to study activities *'most of the time'* (RS20; RS23; RS24) and in decision making *'most of the time'* (RS12; RS23; RS24) or *'some of the time'* (RS20). In two cases, the practitioner was considered a member of the research team (RS12; RS24) and in the third case this was perceived to be *'to some extent'* (RS23).

As the intended goal of the engagement paradigm is to generate relevant research, responses which related to influence of engagement on the study's relevance were considered. All four researchers reported that when the practitioner was engaged in ten study activities or more, it was *'definitely true'* that a consequence was *'increased the relevance of this study to clinical practice'.* Additionally, three considered it '*definitely true'* that practitioner engagement had '*influenced the likelihood of the application of the study findings in local practice'* with the fourth researcher reporting this to be '*somewhat true'*.

5.9.2 Cases of engagement that could align with a hired hand approach

In consideration of the characteristics of a hired hand approach (Table 2.6), cases where practitioners had been engaged in just two study activities and cases in which researchers had reported that they felt they were '*using the practitioner to some extent'* were considered.

5.9.2.1 Cases in which practitioners had been engaged in two study activities

In cases when the practitioner had been engaged in two study activities only, the combination of activities varied across cases. One researcher had engaged a practitioner in '*topic identification'* and '*prioritisation*' (RS9), one in '*participant recruitment'* and '*data collection'* (RS11) and one in '*intervention design'* and '*intervention delivery'* (RS21). Despite none of these researchers indicating that the practitioner was engaged in the protocol design, all three indicated it was *'definitely true'* that the practitioner's '*clinical perspectives are valued in the formative stages of the study*' and also '*definitely true'* that '*the practitioner's clinical perspectives, knowledge and/or skills informed or influenced research activities during the course of the study'.*

Across these three cases, none of the researchers indicated that they felt they were '*using the practitioner*'. One researcher did not consider the practitioner a member of the research team (RS11), one did (RS21) and the third reported them to be a member of the research team '*to some extent'*

(RS9). Practitioner's clinical perspectives were considered equitable to the researcher's perspectives *‘most of the time’* (RS9) and *‘some of the time’* (RS11; RS21). One researcher indicated that if problems arose during the study, they had *‘always’* problem solved with the practitioner using their respective clinical and research knowledge (RS21), whilst the others indicated this was ‘*some of the time’* (RS9; RS11). Similarly, this researcher (RS21) also indicated that they ‘*always*’ made decisions alongside the practitioner, whilst RS11 indicated this was ‘*some of the time’* and one researcher was *‘unsure’* (RS9).

All three researchers indicated that it was *‘definitely true’* that engaging a practitioner in these two study activities had *‘increased the relevance of this study to clinical practice’*. Although one researcher was ‘*unsure*’, two indicated it was *‘definitely true’* that practitioner engagement had *‘influenced the likelihood of the application of the study findings in local practice*’.

5.9.2.2 Cases in which researchers reported they felt they were using the practitioner to some extent

In a further three cases, researchers indicated that they felt they were using the practitioner ‘*to some extent’*. Practitioners had been engaged in five (RS25), eight (RS19) and twelve (RS23) study activities. In two cases (RS19; RS23), engagement took place in both study design and dissemination, whereas RS25 reported that the practitioner had not been engaged in the study protocol. In the case of RS23, when asked if any theory had been used to guide this engagement, the researcher had indicated this was co-production. This same researcher was the only one of the three to indicate that it was ‘definitely true’ that the ‘*practitioner's clinical perspectives, knowledge and/or skills informed or influenced the design of the study protocol’* whereas the others reported this was '*untrue'* (RS25) or were '*unsure*' (RS19). This same researcher (RS23) also indicated it was 'definitely true' that '*the practitioner's clinical perspectives, knowledge and/or skills informed or influenced research activities during the course of the study'* whilst in the other two cases this was '*somewhat true*'. Although these researchers had indicated they felt they were using the researcher '*to some extent'*, one viewed the practitioner as a member of the research team (RS25), with the other two considering the practitioner a member of the research team to '*some extent'*. All three reported it was '*somewhat true'* that the '*practitioner's clinical perspectives were equitable to the researcher's perspectives'*.

These researchers reported that if problems arose during the study, they problem solved with the practitioner '*most of the time'* (RS23), '*some of the time'* (RS19) or '*never*' (RS25) whereas they made decisions with the practitioner '*most of the time*' (RS23) or '*some of the time'* (RS19; RS25).

One researcher indicated it was '*definitely true'* that engaging the practitioner had *'increased the relevance of this study to clinical practice'* (RS23), whilst RS25 indicated this was *'somewhat true'* and RS19 was '*unsure*'. Again, RS19 was '*unsure'* if practitioner engagement in these study activities had 'influenced the likelihood of the application of the study findings in local practice' whilst the other researcher reported this was *'somewhat true'*.

5.10 Summary

The findings of Phase 1 of this mixed methods study were used to devise a tool which enabled the extent of the presence of the concept of Researcher Practitioner Engagement to be investigated. This chapter has reported on the data which were obtained using this tool. Researchers and a practitioner from across the United Kingdom who had experience of practitioner engagement in a health-related research study indicated the extent to which the components of the concept were present from this experience. Further consideration is given to these findings in the following chapter.

CHAPTER SIX - INTEGRATION OF PHASE 1 AND PHASE 2 FINDINGS

6.1 Introduction

In the previous chapter, the data collected using an online questionnaire to measure the extent of the presence of the components of the concept of Researcher Practitioner Engagement were presented. Building on Phase 1, the tool used to collect these data was designed from its outcome, demonstrating integration of these two phases within this exploratory sequential mixed methods study. This chapter demonstrates further integration through the merging of both data sets. To visually demonstrate this integration, joint display tables are presented in section 6.6 with narrative integration to show the analysis and synthesis of these findings (Fetters *et al*. 2013). This integration is taken forward into chapter seven where the inferences drawn from these merged data are considered more evaluatively and in light of the study's theoretical framework and what is already known in relation to the context of this study in order to address objective 4.

6.2 Overview of the outcome of Phase 2

The overarching objective of Phase 2 was to establish the presence of the concept components of Researcher Practitioner Engagement when an academic researcher had engaged a practitioner within healthcare research carried out in the United Kingdom. By gathering these data, it had been anticipated that the extent to which this form of engagement practice is carried out in the UK could be assessed and trends observed in the presence or absence of concept components could be used to evidence areas for development and further investigation. It was hoped that by investigating the presence of the concept consequences, data collected via this survey could provide some initial evidence to support the hypothesis of the conceptual model (section 4.6), that Researcher Practitioner Engagement improves the clinical relevance of a study and contributes to both research capacity building and practice development. It was also expected that comparisons could be made between the responses of researchers and practitioners to assess the level of consistency in their perceptions of the practice of this form of engagement. However, despite a strategic recruitment strategy and the efforts of the researcher, the response rate to the survey was low, and fell well short of the numbers required for use of statistical tests that could reliably allow for any conclusions to be drawn in relation to these objectives. Despite this low response rate, description of the data gives some preliminary insight into the engagement behaviours of those who responded and the extent to which concept components appear to have been experienced within these cases of practitioner engagement. Insights can be obtained from the data which relate to the overall forms of engagement indicated across the cases observed. By obtaining data which relates to each of the very specific concept components, evaluative consideration can be given to analyse what these findings could mean in light of what is already known about the culture of research engagement within the nursing and therapy professions and in relation to the current practice research agenda in the UK.

6.3 Types of engagement observed in the cases reported in Phase 2

As has been repeatedly shown throughout this thesis and illustrated by the study’s theoretical framework (section 2.2), different forms of engagement can take place between researchers and practitioners. The invitation to take part in this study reinforced the inclusion criteria of academically initiated engagement which was outwith a formal organisational collaborative arrangement. Beyond this however, as a newly developed concept whose definition had not yet been shared with the wider community, it was not expected that Researcher Practitioner Engagement, as a specific form of engagement, would yet resonate with potential participants. It was anticipated that those who had experience of different forms of engagement, such as a hired hand approach or forms which aligned with the engagement paradigm, would also respond. Survey findings were therefore considered within the study's theoretical framework, and with the data that were available, attempts made to establish the type of engagement which had occurred in the cases reported.

6.3.1 Evidence of cases that aligned with the engagement paradigm

Defining characteristics of the engagement paradigm show that through an equal partnership, practitioners engage in all or most study activities, share decision making power with the researcher in relation to these study activities and that their skills and knowledge are of equal value to those of the researcher's (Bowen and Graham 2013). As a result, relevant research is generated (Bowen and Graham 2013). When analysed against these characteristics, there was little evidence of this engagement ideal. In four instances, researchers had reported practitioners were engaged in more than ten study activities, including protocol design and study dissemination, indicating engagement had likely taken place in most study activities. Although these researchers were all definite that the practitioner's engagement had influenced the clinical relevance of the study, not all were emphatic that the practitioner's perspectives were equal to theirs, that decision making had been shared or that the practitioner was considered a member of the research team, with one researcher reporting that they felt like they were using the practitioner to some extent. In just one of these cases, theory had guided engagement (co-production) with no indications that these studies had adopted a participatory action research approach or Integrated Knowledge Translation (IKT), the approach underpinned by the engagement paradigm (Bowen and Graham 2013).

What cannot be established from these data, is if the researchers' and/or practitioner's intentions were for a greater level of engagement to be achieved. The absence of richer data which could help to establish why equity was not present, the practitioner was not considered a member of the research team or why there was a perception a practitioner was being used, challenges the ability to confidently conclude the extent to which these examples align with the engagement paradigm, or indeed, if this level of engagement was intended but not realised. What can be concluded is that there is evidence, in a small proportion of cases, to suggest efforts were made to engage practitioners in most study activities with perceived positive impact on the study's clinical relevance as a result. As shown from Phase 1 data, when the necessary antecedents of time, addressing barriers to engagement and a supportive culture are not present, this can challenge the engagement process, however the nature of the survey meant it was not possible to explore if these were impinging factors.

6.3.2 Evidence of cases that aligned with a hired hand approach

Based on the theoretical characteristics of a hired hand approach (Roth 1966), it was surmised that establishing if this type of engagement had been adopted by a researcher in the instances collated by this survey was difficult to establish. Many of the defining elements of a hired hand approach are identifiable from the practitioner's perspective and the role they perceive to have played in a study, such as feeling no ownership, having a desire to make a creative contribution and feeling like they have had no opportunity to express an intrinsic interest in the outcome (Roth 1966). The one instance which was reported by a practitioner indeed did allude to the potential of this being categorised as a hired hand approach, as in this case they had only been engaged to recruit participants to a study. Further evidence from their survey responses also suggested that perhaps a hired hand approach had been adopted, such as them indicating they did not feel like a member of the research team, were not involved in developing the study protocol and little evidence of actively problem solving or making decisions with the researcher in relation to study activities. Although the practitioner indicated that they felt the researcher had benefited more from the engagement than they had, they felt ownership of the study to some extent, felt they had contributed to the relevance of the study and reported several benefits in relation to their own individual capacity building and that of their team. Again, without being able to explore this case further, the specific type of engagement cannot be determined. And again, the level of engagement actually realised, compared to the level that was intended cannot be established.

Although it is acknowledged that examples of a hired hand approach might be difficult to identify from researcher data only, potential instances were determined through responses to a question asking if they felt like they were using the practitioners at any point in the study; three researchers perceived that they had done to some extent. However, these instances were varied in their responses in relation to both the presence of the concept attributes and consequences, demonstrating the difficulty in being able to draw conclusions from these data on the type of engagement experienced. For example, the number and combination of activities ranged from one researcher whose only contact with the practitioner was via a R&D representative in the practitioner’s organisation and engaged this practitioner in study approvals, recruitment and data collection, to another who engaged directly with the practitioner in twelve study activities. In these cases, researchers were not always sure that the practitioner had benefited from the engagement and there were mixed opinions on the influence of the engagement on factors such as the study’s clinical relevance.

In three cases, researchers reported engaging a practitioner in just two activities. Although practitioners were not involved in the study’s protocol design, in these three cases researchers clearly indicated that the practitioner’s clinical perspectives had influenced the study protocol, and perceived equity between their perspective and that of the practitioner, indicating that perspectives of both parties were used to jointly problem solve in relevant study activities. All were definite that practitioner engagement had increased the clinical relevance of the study. These examples, together with the practitioner example, suggest that even when engaged in just a small number of study activities, there is potential for the engagement to have a positive influence on clinical relevance.

6.3.3 Evidence of cases that aligned with Researcher Practitioner Engagement

Across the 21 cases observed via this survey, engagement of practitioners ranged from one through to fifteen study activities, with engagement most frequent in three to five activities. Heterogeneity in the number and combination of study activities in which practitioners were engaged and the finding that engagement occurred most frequently in participant recruitment, concurred with observations made in the scoping review (*paper 1*) and mirrored the engagement activities of Phase 1 participants (section 4.3). Although based on a small sample size, these patterns of behaviour add further weighting to the conclusion drawn following analysis of engagement examples identified in the scoping review, that is, that a type of engagement taking place within health care research very often does not match that of the ideal postulated by the engagement paradigm (Bowen and Graham 2013). Crucially, as indicated by survey responses, engagement of a practitioner was perceived to add value to a study and improve its clinical relevance in most cases and in many, perceived to result in changes to practice regardless of the number or combination of study activities in which engagement took place.

6.4 Extent of the presence of the concept components of Researcher Practitioner Engagement in cases of engagement reported in Phase 2

Investigating the extent of the presence of each individual component allowed observations to be made in relation to the very specific defining attributes, necessary pre-requisites and potential consequences of the concept which had been identified in Phase 1. In the following sections, key findings relating to concept components are considered.

6.4.1 Extent of the presence of concept attributes

Mutually beneficial: Across the 21 instances of engagement reported in Phase 2, although some cases indicated presence of all attributes to some extent, in no instances were all attributes present with the strongest level of assertion that could be indicated by the rating scale. As analysis of the findings show, the attribute with the strongest presence appeared to be attribute 3, mutually beneficial, with nearly all researchers indicating that from their perspective, it was definitely true that this attribute had been experienced. Although it is not surprising that researchers experienced benefit from this process, their subjective perception of the practitioner's experience cannot be relied upon, and in addition, the specific benefit the researchers perceive they experienced is not known. Of note, is that the practitioner respondent perceived the researcher to have experienced greater benefit than them. There had been little dispute from Phase 1 participants of the relevance of the essence of the reciprocal nature of this concept component and it was reasoned necessary to ensure the process was not one sided in favour of researchers. Further consideration perhaps needs to be given as to how this attribute can be given greater specificity to articulate the benefits that should be experienced and if these benefits should relate directly to the concept consequences. In light of some Phase 1 participants also revealing that they made assumptions that the practitioner had experienced benefit from the process, it raises the issue of ensuring the intended consequences for the practitioner strive to be achieved and how they can be established.

Perspectives are equitable: Despite Phase 1 participants being very clear on the importance of practitioners' clinical skills and perspectives within Researcher Practitioner Engagement, the attribute which was present least within Phase 2 cases was equity of the perspectives of the practitioner and the researcher. Just one researcher claimed their perspectives and the practitioner's perspectives were always equitable, though as this was the case in which the researcher had indicated engagement in the greatest number of activities across the 21 cases, a higher level of engagement was perhaps experienced overall. Although a key defining characteristic of the engagement paradigm is that researchers and practitioners have an equal role, within Researcher Practitioner Engagement this equality relates specifically to the equity of knowledge perspectives generally within a study as opposed to necessitating each play an equal role throughout. This was attributed to recognition by both parties that the study is the researcher's responsibility, whilst practitioners' priority remains their clinical workload but reflects the equity of clinical and scientific knowledge within the research process. Although two researchers were unsure, a considerable proportion of researchers indicated that they perceived practitioners' perspectives to be equitable most (45%) or some of the time (40%). However, this question was asked generally, and not specific to each of the activities in which the practitioner was engaged, and therefore, clarity on perceived equity in relation to specific study activities could not be established.

Practitioner should be engaged in protocol design: Clearly indicated from the outcome of Phase 1, practitioners should be engaged in the design of the study protocol (attribute 1), as it is at this stage of a study when their clinical perspectives were considered most likely to influence clinical relevance (attribute 2). In the majority of cases, in both phases, researchers reported they had done so and some evidence in Phase 2 showed that, even when the practitioner had not been engaged in protocol design, it was indicated that the practitioner had influenced the protocol to some extent. There were, however, examples in which there had been no practitioner input into protocol design and indication that practitioners had been engaged by the researcher at a stage of the research process when it was too late for them to have any influence.

All researcher participants in Phase 1, with only one exception, had a qualification in a healthcare discipline, reflecting the culture of health research in the UK in which often academic researchers have clinical backgrounds, with a small percentage holding clinical academic roles (Baltruks *et al.* 2020). Despite this clinical knowledge, practitioners in Phase 1 were clear that it is the clinical perspectives of practitioners within the clinical context in which the study will be conducted which are necessary. Some researchers in Phase 2, however, indicated that it was true to some extent that they had not required the clinical perspectives of practitioners at times, as they had a clinical background themselves and there were cases when it was reported that the researcher had no presence in the clinical environment during the course of the study. Examples used in Phase 1 gave insight into practitioners' frustrations when lack of consideration was given to clinical factors which practitioners perceived then influenced the study's clinical relevance and examples of when and how their perspectives specific to the clinical context had positively influenced a study. Suggestion from the findings of Phase 2 that practitioners' clinical perspectives are not always sought in a study design, therefore, highlights an area for consideration. This attribute does not call into doubt the clinical knowledge of the researcher but reinforces the need for the 'coal front' perspective, and so perhaps requires this level of detail to be reflected more specifically within the attribute wording.

Practitioner should be engaged in dissemination activities: Across the 21 cases observed in Phase 2, there was evidence of practitioners co-authoring papers and presenting at local and national events, but no other forms of dissemination activity indicated. Many studies were still ongoing, so potential for even greater engagement in dissemination activities was possible. The specific question of practitioner authorship was posed in Phase 2 for two reasons; firstly, as it was indicated in Phase 1 that contributing to study dissemination offered practitioners an opportunity to develop writing skills, these data helped to establish the frequency of when these opportunities had been taken up. Secondly, peer reviewed journals now stipulate that all authors of a manuscript should meet the authorship criteria. These criteria require that all authors have made a substantial contribution to not only drafting of the paper but the conception, design and conduct of the study which is reported. Data on clinical authorship had therefore been extracted from the examples within the scoping review as a way to demonstrate the involvement of the practitioner, not only in dissemination, but within the study itself. Of note, within Phase 1, a researcher shared that they used journal authorship guidelines to measure practitioner engagement. She spoke of considering this as a way to establish if a practitioner had been engaged ‘properly’. Although this endeavour is laudable as a measure of engagement levels, it presents challenges when large number of practitioners are engaged, as not all can be given the opportunity to be co-authors.

In the scoping review, practitioner authorship was identified in a third of publications and in Phase 2, practitioners were reported to have co-authored papers in half of the cases. This leads to question if practitioner authorship is indeed a viable indicator for engagement or in light of what constitutes ‘substantial contribution’ can only be indicative of examples which align more closely with the engagement paradigm. One Phase 1 researcher had engaged 70 therapists to recruit participants and collect data; therefore, practitioner authorship as a realistic expectation of practitioner engagement should perhaps also be questioned considering the number of practitioners who could potentially be engaged and the often-reported barrier of time. More pertinent to the attribute, however, is that engagement in dissemination was considered important to the concept as the findings were perceived to have greater impact if communicated by those with a stake in the research. Therefore, the dissemination activities in which a practitioner is engaged should perhaps not only take into consideration what is feasible but also what is likely to have greatest accessibility and impact for the intended study audience. It is recognised that researchers will need to continue to disseminate their studies via academic routes. However, accessibility to academically reported studies is considered a barrier to research engagement by healthcare professionals (Hines 2016), therefore, creative ways of effective dissemination from the voice of the engaged practitioner to the practice community could be explored (Bell and Pahl 2018) and formats which are acceptable to other audiences, such as patients and the public. As a defining principle of a hired hand approach is that the practitioner does not receive credit for the outcome of the study, thought should also be given to if and how this credit can be acknowledged when authorship is not feasible or does not meet with journal authorship requirements.

Clinically informed problem solving and decision making: The attribute with which participants in Phase 1 agreed with least was shared decision making.

After analysis of this and other concept components, clinically informed problem solving was added to the concept attributes to demonstrate necessity for this joint process leading up to a decision. Interestingly, in Phase 2, practitioners were more likely to be involved in problem solving with the researcher than they were to make decisions together. This behaviour could be seen to support the amendment made to this concept component during the analytical phase of the concept development. However, caution is required when interpreting this finding as this could also be indicative of researchers choosing to take decisions independently.

In light of Researcher Practitioner Engagement being a researcher-initiated process, the link between power and decision making is an important issue here (Numans *et al.* 2019) particularly as it is the effect of power differentials perceived to be afforded by academic or scientific knowledge, which has led to the inclusion of power sharing to be a key feature of the engagement paradigm and definitions of co-production (Hickey *et al.* 2018; Bowen and Graham 2013). Practitioners in Phase 1 asserted the positive effect of having autonomy to make local decisions relating to study activities and it was acknowledged by both parties that at times one party was better placed to make a decision over another. However, in Phase 2, on no occasion was it reported that the practitioner had made a decision relating to the study without the researcher, and in most cases (n=15) had reportedly not problem solved without seeking the researcher's input. Without more detail in relation to these cases, it is difficult to establish why this may be the case.

6.4.2 Presence of the consequences of Researcher Practitioner Engagement

Within chapter one, it was clearly outlined that a key contributor to the gap between research and practice within healthcare, is that practitioners often perceive research produced by academic researchers to be irrelevant to their practice. That engagement of practitioners in the research process could address this issue by increasing the relevance of studies to clinical practice was therefore a key concept within this study and identified as a consequence of Researcher Practitioner Engagement within Phase 1. Across the 21 cases of engagement reported in Phase 2, regardless of the number of activities in which the practitioner had been engaged, it was perceived that the relevance of the study had been influenced. Researchers were very positive that the practitioner’s engagement had added value, with a perception in more than half of cases that it had contributed to study feasibility (n=12), impact (n=14) and internal validity (n=11). Researchers also reported that the practitioner had influenced specific study activities, mostly identification and recruitment of participants, delivery of the study intervention and data collection. A perhaps more pertinent observation here, are the study activities which most researchers perceived that practitioners did not influence, such as choice of outcome measures, and so perhaps raises questions as to if and why this was the case.

Improving the clinical significance of a study was not the only potential outcome identified in Phase 1. Practice developments and opportunities for capacity building at individual and team level were also believed to be potential consequences of RPE. Despite being engaged in just one study activity (participant recruitment), it was encouraging to see that the practitioner perceived a number of individual and team benefits from this engagement experience, supporting the notion that this form of engagement offers a legitimate opportunity to build individual research capacity through an experiential learning model (O'Byrne and Smith 2010). Like the practitioners in Phase 1, they also agreed that engagement in this study had contributed towards 'developing expertise' in his or her field. Questions relating to this consequence had not been posed to researchers to the same extent, as one outcome of the expert review of the survey tool was that a researcher would not be expected to reliably provide responses to these questions. However, when asked generally if they had perceived that engagement in the study had influenced any element of the practitioner's decision making or actions within their practice, many considered this to be the case. However, the practitioner did not agree that it had resulted in any changes to their practice, perhaps due in part to this study being ongoing.

The findings of Phase 2 indicated that although in more than half of cases, practitioners had been engaged as a result of an existing relationship, many relationships had been developed through engagement in this study and many researchers were positive about their motivation to engage a practitioner in future studies. Researchers were positive about the learning they had gained from the engagement in relation to developing understanding of the clinical area and were motivated to engage a practitioner in future studies.

6.4.3 Presence of antecedents of Researcher Practitioner Engagement

During Phase 1 fieldwork, when discussing the relevance of concept antecedents, both researchers and practitioners very often referred to barriers they had experienced to demonstrate their recognition of the necessary pre-requisites to Researcher Practitioner Engagement. This mirrored how data had been extracted from the instances analysed in the theoretical phase to propose the concept antecedents, as in a number of the descriptive papers, identification of the barriers was a focus (*paper 1*). Recognition of the potential impact from these instances in fact, led to ‘identifying and addressing barriers to engagement’ being proposed as a discrete concept antecedent. Barriers discussed by Phase 1 participants were synonymous with many of those repeatedly reported across nursing and therapy literature in relation to research engagement generally (Bench *et al.* 2019; Borkowski *et al.* 2016) and resonate with the need for a culture of valuing research, across organisational, team and individual levels (Slade *et al.* 2018).

The concept antecedents were amended in Phase 1 to reflect the need for a vested common interest. Specifically, practitioners asserted a major factor which motivated them to engage was the ability to see the benefit of the study for their patients, an observation some researchers had also made during their engagement experiences and noted recently across in nursing literature (Mathieson *et al.* 2019). Perceptions of researchers and the practitioner in Phase 2 cases, in the main showed vested interest in the study topic, though that in a small number of cases researchers were unsure of the practitioner’s views of the benefits, suggests examples of engagement when this issue was not discussed.

Finally, changes had been made within the antecedents to reflect the importance placed on the need for a research culture within the practitioner’s organisation, however, in only two cases in Phase 2 was it perceived to be true that the practitioner’s organisation had a strong research culture. As is discussed further in chapter seven, factors such as this at a meso level, need to be addressed for Researcher Practitioner Engagement to occur.

6.5 Evaluation of Researcher Practitioner Engagement

Similar to Phase 1, ways in which survey respondents reported measuring the consequences of the engagement were limited, with few using any specific methods of recording or demonstrating these outcomes and those who did, using only reflective notes or inclusion in a report to funders. However, like examples in the scoping review, some researchers (n=5) indicated that they had undertaken additional formal evaluative work, although further details of what this evaluation entailed were not sought.

6.6 Joint display tables

Joint display tables were instigated in the early stages of the instrument development process to build on the data from Phase 1. The tables were populated with each of the concept components and illustrative quotes added to show how each of the items within the data collection tool had been arrived at. Once Phase 2 was analysed and collated in tables, these were then added to the joint display tables to visually show the integration of the data from these two phases. Below, joint display tables for attribute 2, antecedents 1 and 4 and consequence 3 have been presented to illustrate how these were constructed and communicate merged data.

Table 6.1 Example of a joint display table (Attribute 2)

<table>
<tr><th>Concept Component</th><th colspan="5">Attribute 2 <i>Practitioner's clinical perspectives influence the research process</i></th></tr>
<tr><td>Phase 1</td><td>Illustrative quotes</td><td colspan="4"><i>"help their understanding about what goes on"</i> Pr2 (Focus group P1)
<i>"there's an invaluable contribution from the practitioners… had they not have been willing to engage in that process, the study probably wouldn't work, because we wouldn't get the data collection and you wouldn't get the numbers"</i> AR12 (Focus group R4)
<i>"I've had situations myself where the protocol has had to be revised and go back to ethics, based on feedback from practitioners"</i> AR1 (Focus group R1)
<i>"I don't think they've actually worked clinically for quite some time…….there's a few things they'd just assumed would happen and we were like – Oh no, it doesn't really work like that anymore"</i> Pr4 (Focus group P2)</td></tr>
<tr><td rowspan="2">Phase 2</td><td>Survey Questions</td><td>The practitioner's clinical perspectives, knowledge and/or skills influenced the design of the study protocol</td><td>The practitioner's perspectives, knowledge and/or skills and led to changes to the study protocol</td><td>The practitioner's perspectives, knowledge and/or skills informed or influenced the protocol during the course of the study</td><td>I have a clinical background so the practitioner's clinical perspectives, knowledge and/or skills were not always required</td></tr>
<tr><td>Survey findings</td>
<td><table><tr><th>Researchers</th><th>Total (n=20)</th></tr><tr><td>Definitely true</td><td>11</td></tr><tr><td>Somewhat true</td><td>5</td></tr><tr><td>I don't know</td><td>1</td></tr><tr><td>Not true</td><td>3</td></tr><tr><td>Definitely not true</td><td>0</td></tr></table></td>
<td><table><tr><th>Researchers</th><th>Total (n=20)</th></tr><tr><td>Definitely true</td><td>5</td></tr><tr><td>Somewhat true</td><td>11</td></tr><tr><td>I don't know</td><td>0</td></tr><tr><td>Not true</td><td>3</td></tr><tr><td>Definitely not true</td><td>1</td></tr></table></td>
<td><table><tr><th>Researchers</th><th>Total (n=20)</th></tr><tr><td></td><td></td></tr><tr><td>Definitely true</td><td>10</td></tr><tr><td>Somewhat true</td><td>7</td></tr><tr><td>I don't know</td><td>1</td></tr><tr><td>Not true</td><td>0</td></tr><tr><td>Definitely not true</td><td>2</td></tr></table></td>
<td><table><tr><th>Researchers</th><th>Total (n=20)</th></tr><tr><td>Definitely true</td><td>0</td></tr><tr><td>Somewhat true</td><td>9</td></tr><tr><td>I don't know</td><td>2</td></tr><tr><td>Not true</td><td>5</td></tr><tr><td>Definitely not true</td><td>4</td></tr></table></td></tr>
</table>

<table>
<tr><td></td><td>Concept Component</td><td colspan="2">Attribute 2 <i>Practitioner’s clinical perspectives influence the research process</i></td></tr>
<tr><td></td><td>Survey question</td><td>Do you think that engagement of a practitioner in this study had a positive influence on any of the following aspects of the study?</td><td>Do you think your engagement in this study had a positive influence on any of the following aspects of the study?</td></tr>
<tr><td></td><td>Survey findings</td><td>
<table>
<tr><th colspan="5">Researcher (n=20)</th></tr>
<tr><th>Study Activity</th><th>Yes</th><th>To some extent</th><th>No</th><th>Not relevant to this study</th></tr>
<tr><td>Content of protocol</td><td>10</td><td>6</td><td>3</td><td>1</td></tr>
<tr><td>Funding</td><td>9</td><td>2</td><td>7</td><td>2</td></tr>
<tr><td>Gaining approvals</td><td>9</td><td>5</td><td>4</td><td>1</td></tr>
<tr><td>Participant documentation</td><td>5</td><td>5</td><td>8</td><td>2</td></tr>
<tr><td>Identifying participants</td><td>15</td><td>2</td><td>1</td><td>2</td></tr>
<tr><td>Recruiting participants</td><td>14</td><td>3</td><td>1</td><td>2</td></tr>
<tr><td>Designing study intervention</td><td>9</td><td>6</td><td>1</td><td>4</td></tr>
<tr><td>Choice of outcome measures</td><td>5</td><td>4</td><td>8</td><td>3</td></tr>
<tr><td>Delivery of study intervention</td><td>12</td><td>2</td><td>2</td><td>4</td></tr>
<tr><td>Data collection tool</td><td>7</td><td>5</td><td>6</td><td>2</td></tr>
<tr><td>Data collection process</td><td>10</td><td>3</td><td>5</td><td>2</td></tr>
<tr><td>Data analysis & interpretation</td><td>2</td><td>12</td><td>5</td><td>1</td></tr>
<tr><td>Overall outcome</td><td>11</td><td>6</td><td>2</td><td>1</td></tr>
<tr><td>Dissemination</td><td>7</td><td>7</td><td>4</td><td>1</td></tr>
</table>
</td><td>
<table>
<tr><th>Practitioner (n=1)</th></tr>
<tr><td>Yes</td></tr>
<tr><td>Study funding</td></tr>
<tr><td>Identifying appropriate participants</td></tr>
<tr><td>Recruiting participants to the study</td></tr>
<tr><td>Data collection process</td></tr>
<tr><td>To some extent</td></tr>
<tr><td>Participant documentation</td></tr>
<tr><td>Dissemination of the study</td></tr>
<tr><td>Use of the study findings in clinical practice</td></tr>
<tr><td>Relevance of the study findings to clinical practice</td></tr>
<tr><td>No</td></tr>
<tr><td>Feasibility of the study</td></tr>
<tr><td>Design of the study intervention</td></tr>
<tr><td>Delivery of the study intervention (e.g. scheduling)</td></tr>
<tr><td>Choice of outcome measures</td></tr>
<tr><td>Data collection tool (e.g. survey, interview schedule)</td></tr>
<tr><td>Analysis and interpretation of the findings</td></tr>
<tr><td>Overall outcome of the study</td></tr>
<tr><td>I don’t know</td></tr>
<tr><td>Content of the study protocol</td></tr>
<tr><td>Gaining study approvals (e.g. ethics or Trust approvals)</td></tr>
</table>
</td></tr>
</table>

Table 6.2 Example of joint display table (Antecedent 1)

<table>
<tr><th>Concept Component</th><th colspan="3">Antecedent 1 Common vested interest in a study topic and its outcomes
<i>Researcher and practitioner share an understanding of the purpose of the study</i></th></tr>
<tr><td>Phase 1</td><td>Illustrative quotes</td><td colspan="2">Practitioners
<i>“I think there has to be that (shared goal) there to really have an impact”</i> Pr5 (Focus Group P2)
<i>“I think it’s really important to have shared goals, but I think you also would have some different goals”</i> Pr7 (Focus Group P3)
Researchers
<i>“there is a shared goal, but it’s coming from slightly different angles and with different motivations maybe”</i> AR12 (Focus group R4)
<i>“sometimes people do have a shared goal, but may have a different understanding of how you are going to get there as part of the research process”</i> AR2 (Focus group R1)
Triangulation group
<i>“something that you’re both committed to exploring for different reasons”</i> AR15</td></tr>
<tr><td rowspan="3">Phase 2</td><td rowspan="2">Survey question</td><td>Researchers</td><td>Practitioner</td></tr>
<tr><td>Indicate if you think yourself and the practitioner had the same understanding of the purpose of the study and its outcomes</td><td>Indicate if you think yourself and the researcher had the same understanding of the purpose of the study and its outcomes</td></tr>
<tr><td>Survey findings</td><td><table><tr><th colspan="2">Researcher (n=20)</th></tr><tr><td>Definitely true</td><td>12</td></tr><tr><td>Somewhat true</td><td>7</td></tr><tr><td>I don’t know</td><td>1</td></tr><tr><td>Not true</td><td>0</td></tr><tr><td>Definitely not true</td><td>0</td></tr></table></td><td><table><tr><th colspan="2">Practitioner (n=1)</th></tr><tr><td>Definitely true</td><td>1</td></tr></table></td></tr>
</table>

Table 6.3 Example of joint display table (Antecedent 4)

<table>
<tr><td>Concept Component</td><td colspan="3">Antecedent 4 Realising and addressing challenges within the clinical context that could impact on engagement
<i>Practitioner's time</i></td></tr>
<tr><td>Phase 1</td><td>Illustrative quotes</td><td colspan="2">Practitioners
<i>"if there isn't clinical time and you don't have the support, then actually what you're really doing is just putting the pressure back on to them, then pressure on to management to try and manage a clinical service"</i> Pr6 (Focus group P3)
<i>"it's difficult to integrate into the workload, because it's definitely just something extra that we're doing"</i> Pr7 (Focus group P3)
Researchers
<i>"there has to be some recognition that it's going to take up additional time on top of their workload"</i> AR9 (Focus group R3)
<i>"integrate what I need the therapists to do as seamlessly into their workload and their normal day-to-day practice as possible and make it as easy a step for them as I possibly can, without adding to the workload"</i> AR12 (Focus group R4)
Triangulation (Focus group R5)
<i>"it's trying to, as much as possible, make what is required part of the work they already do, rather than giving them a lot of extra work to do"</i> AR16</td></tr>
<tr><td rowspan="3">Phase 2</td><td rowspan="2">Survey question</td><td>Researchers</td><td>Practitioner</td></tr>
<tr><td>In relation to this study:</td><td>In relation to the study:</td></tr>
<tr><td>Survey findings</td><td>
<table>
<tr><th colspan="6">Researchers (n=20)</th></tr>
<tr><th></th><th>Definitely true</th><th>Somewhat true</th><th>Don't know</th><th>Not true</th><th>Definitely not true</th></tr>
<tr><td>The practitioner was allocated time within their workload to engage in this study</td><td>4</td><td>8</td><td>4</td><td>4</td><td>0</td></tr>
<tr><td>The practitioner was seconded from their clinical role to engage in this study</td><td>0</td><td>1</td><td>1</td><td>11</td><td>7</td></tr>
<tr><td>The practitioner used some of their own personal time outside of usual working hours to engage in the study</td><td>4</td><td>7</td><td>5</td><td>3</td><td>0</td></tr>
<tr><td>Backfill money was used to cover some of the practitioner's clinical duties to enable them to engage in this research</td><td>1</td><td>3</td><td>1</td><td>6</td><td>9</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="2">Practitioner (n=1)</th></tr>
<tr><td>I was allocated time within my workload to engage in this study</td><td>Not true</td></tr>
<tr><td>I was seconded from my clinical role to engage in this study</td><td>Not true</td></tr>
<tr><td>I used some of my own personal time outside of usual working hours to engage in the study</td><td>Not true</td></tr>
<tr><td>Backfill money was used to cover clinical duties to enable me to engage in this research</td><td>Not true</td></tr>
</table>
</td></tr>
</table>

Table 6.4 Example of joint display table (Consequence 3)

Concept Component	**Consequence 3** Improves clinical significance of a study and its findings	
Phase 1	**Illustrative quotes**	**Triangulation (Focus Group R5)** *“the method that I had chosen wouldn’t have given us relevant results, but because I had taken on board what the practitioners had told me was their normal practice, the findings were actually much more relevant, the data collection was much more robust”* AR16 *“input from the clinicians definitely shaped the methodology…. It definitely shaped the interpretation of findings”* AR15 *“the questions they are asking are answered in a much more robust way”* AR15 *“what you end up with, is something that is significant from a research point of view. So maybe statistically significant, but also has real significance for clinical practice”* AR15 **Researchers** *“if you are getting your target and they are advising on the outcomes, then internally, your study could be more valid”* AR11 (Focus Group R3) *“I’ve had instances where I’ve modified measures, or modified questionnaires based on feedback in the process of a trial from staff”* AR1 (Focus Group R1) **Practitioners** *“being a clinician, that was my role…. It was, this is what OTs are doing in current practice”* Pr2 (Focus Group P1)

continued

Table 6.4 Continued

Phase 2	**Survey question**	Engaging with a practitioner in this study has
	Survey findings	

Researchers (n=20)				
	Definitely true	**Somewhat true**	**Not sure**	**Not true**
Contributed to study’s				
feasibility	12	7	0	1
impact	14	4	2	0
Improved				
internal validity	11	7	2	0
external validity	10	7	3	0
overall methodological quality	6	6	6	2
relevance of this study to clinical practice	13	6	1	0
Influenced				
likelihood of application of study findings in local practice	11	5	4	0
likelihood of application of study findings in wider practice	8	7	5	0

6.7 Summary

This chapter has presented the merged findings of Phase 1 and 2 of this study, both through narrative consideration of the integration of this data and examples of joint tables used to visually display how these data were merged. Despite the sample size realised within Phase 2, merging data in this way highlighted areas for further consideration. In the final chapter of this thesis, analytical consideration is given to these findings, and the contribution that this work has made to current knowledge and recommendations made for research and practice.

CHAPTER SEVEN - DISCUSSION AND CONCLUSION

7.1 Introduction

The aim of this study was to develop the concept of ‘Researcher Practitioner Engagement’ in the context of nursing, midwifery and therapy research and to investigate the presence of this concept within the healthcare research arena in relation to these disciplines in the United Kingdom. In this chapter, evaluative consideration is given to if and how this aim has been met, the contribution that this work has made to current knowledge and analysis of the findings within the current context of research practice engagement in the UK. Objective 4 is also addressed by identifying factors which require further consideration in the development of the concept of ‘Researcher Practitioner Engagement’ and its practice. As part of this evaluative consideration, implications and recommendations for practice and future research are made throughout and summarised at the end of the chapter. In addition to the study findings, the methodological approach which was adopted is also evaluated through critical consideration of the strengths and potential limitations of this study.

7.2 Practitioner engagement in research in the current research climate

In the United Kingdom, there is continuing momentum to ensure the true value of research is recognised across the health sector. This has been evidenced recently at macro level in several ways, for example; 1) recommendations by the Council of Deans of Health for greater integration of research within pre-registration training programmes to ensure practitioners enter clinical practice with the capability and confidence to be evidence-informed practitioners (McCormack *et al.* 2019); 2) a national research practitioner framework for all Allied Health Professions (Harris *et al.* 2019); 3) the drive to ensure research utilisation by registered practitioners in the strategic priorities of professional bodies (Royal College of Occupational Therapists (RCOT) 2019). All reinforce that, regardless of discipline, role or clinical setting, research is everyone’s business, and that all healthcare practitioners, as a minimum expectation, are required to be active research consumers.

Specifically, the issue of practitioner engagement in research in the United Kingdom appears to be gaining traction. This agenda is not only driven by the need for care to be evidence-informed, but by emerging evidence which alludes to improved healthcare outcomes when organisations, their staff and patients engage in research activities (Academy of Medical Sciences 2020; Harding *et al.* 2016; Boaz *et al.* 2015). A recent rapid review carried out by The Healthcare Improvement Institute (THIS) (Marjanovic *et al.* 2019), focussed on the issue of NHS staff supporting healthcare studies and further demonstrates the value of NHS staff to the research process. Similar to the scoping review which initiated this study, examples of NHS staff engagement were synthesised and categorised by the specific study activities in which they played a role. Although examples span all healthcare disciplines, the conclusions derived from this review and the recommendations made in a report compiled by the research team (Marjanovic *et al.* 2019; Dimova *et al.* 2018), concur with elements of Researcher Practitioner Engagement. Its variable nature is supported by reinforcing a practitioner’s valuable role in key aspects of the research process and the need to be driven by each study’s individual engagement needs (Marjanovic *et al.* 2019; Dimova *et al.* 2018). The review’s conclusions further support the need for Researcher Practitioner Engagement, by asserting the expertise of NHS staff which could contribute to building the evidence base for clinical practice, yet opportunities for practitioner engagement are not being fully realised (Marjanovic *et al.* 2019). Further, the Academy of Medical Sciences (2020) has since suggested that the gap between academia and practice is widening, with evidence of a decline in practitioner's engagement with research, both as producers and consumers. They make a series of recommendations to address this issue, including the need to further ensure the healthcare system truly values research and greater integration of teams across academia and the NHS. This concurs with Marjanovic *et al.'s* (2019) view that a change in research culture which supports engagement is required, and specifically which factors time into clinical staffs' workloads to facilitate this engagement. This mirrors the sentiments offered by Phase 1 participants, and which has subsequently been reflected in the concept antecedents; that a culture which values research and so addresses barriers to engagement, such as practitioners' time, are necessary before Researcher Practitioner Engagement can take place.

As discussed in *paper 3*, a practitioner's front facing clinical role means they are well placed to support researchers with tasks within the research process, such as participant recruitment and data collection. By extending the search strategy of the original scoping review to include the terms 'recruiter' and 'data collector', a further body of literature was identified which provided more examples of how practitioners are engaged in the research process by academic researchers. As weaknesses in the quality of clinical trials is often attributed to challenges faced in the recruitment of an adequate sample (Briel *et al*. 2016; Treweek *et al.* 2013), evaluations of recruitment activity are often embedded in or extended from clinical studies and so provides a qualitative narrative which reflects on and describes facilitators and challenges of recruitment practices and practitioners' experiences (Loades *et al.* 2019; Thomas *et al.* 2015; Mars *et al.* 2014; Nurmi *et al.* 2014).

Data from this literature base suggests that the behaviours of practitioners engaged to deliver elements of a study protocol can be influenced by their backgrounds, experiences and personal agendas and so can result in a detrimental effect on the integrity of study (Lawton *et al.* 2012). Gatekeeping behaviours and lack of equipoise can cause the exclusion of potentially eligible participants or restrict their ability to choose to take part (Patterson 2010). Much like a hired hand approach, practitioners in some examples carried out recruitment roles when they felt a sense of duty to the researcher as opposed to seeing benefit for the patient, often not feeling part of the process (French and Stavropoulou 2016; Patterson 2010). What can be learnt from this literature, and which again reinforces points made by Phase 1 practitioners, is that a vested interest in the study can make them more likely to engage in study activities, achieved through a positive research culture, valuing research generally, an understanding of the study and its benefits for patients and timely collaborations with researchers (Daly 2019; French and Stavropoulou 2016; Nurmi et al. 2014).

Although it concerns mainly medical professionals as recruiters, Paramasivan et *al*.'s (2011) example provides a good illustration of how findings of these evaluations can address recruitment issues and so improve a study's success. In their two-phase evaluation, issues which had led to low recruitment were investigated followed by a second phase of interventions to address the identified issues. Simplifying recruitment procedures, changes to terminology in patient information sheets, changes to better align with clinic schedules and relaxing of inclusion criteria to align more closely with the patient profile were just some of the actions taken to address recruitment challenges. The model of Researcher Practitioner Engagement (section 4.6), now offers the opportunity for issues such as these to be addressed in study planning and design, as opposed to being reactionary which can add further time required to undertake the study as well as requiring additional resources.

Pragmatic trials have emerged in response to the need for greater clinical relevance and expedience of research into clinical practice (Tuzzio and Larson 2019; Finnegan and Polivika 2018; Weinfurt *et al.* 2017). They adopt a pragmatic approach, specifically to ensure study activities, such as the patients recruited and the care delivered, are embedded in and align closely with clinical practice (Weinfurt *et al.* 2017). Doing so attempts to strike a balance between relevance and rigour by injecting realism into the study design (Pickler and Kearney 2018). To achieve this however, early engagement with clinicians is essential to understand how the study can be integrated into current clinical workflow and the adaptations necessary to ensure a study is acceptable to the clinicians concerned (Weinfurt *et al.* 2017; Topazian *et al.* 2016). However, pragmatic clinical trials are still in their infancy, particularly in the disciplines of nursing, midwifery and therapies, and so there is little evidence to draw on at present. In addition, this type of research relates to just one specific methodological approach, amongst the array of approaches used within these disciplines to generate knowledge to inform clinical practice.

The issues addressed in this section span practitioner engagement in health research more broadly than the specific context of this study. However, this recent activity demonstrates the developing significance of practitioner engagement within healthcare research and highlights relevant developments since this study's inception. The following sections of this chapter are dedicated more specifically to the context of this study and its aim, evaluating if and how this was achieved and the contribution this study has made to knowledge.

7.3 Development of the concept of Researcher Practitioner Engagement

The primary objective within this study evolved when it was abductively reasoned that a type of engagement had been observed in published literature that, when critically considered within the theoretical framework of this study (section 2.2), suggested a conceptual gap. The outcome of Phase 1 demonstrates that this conceptual gap has now been filled by empirically identifying the attributes, antecedents and consequences of the newly developed concept, 'Researcher Practitioner Engagement' and using these identified concept components to devise a definition and inform the content of a conceptual model. Within the discussion section of *paper 3* (section 4.7), evaluative consideration has been given to the key components of the concept identified in Phase 1. Ways in which this newly developed concept differs from other forms of engagement which informed the theoretical framework of this study are analysed, and in doing so, the contribution that this new concept can make to understanding engagement of practitioners in health research is articulated. A case is made that, by applying the elements of Researcher Practitioner Engagement, both academic researchers and practitioners can safeguard against a hired hand approach (Roth 1966), and instead, adopt a form of engagement in which practitioners can play a meaningful role in the production of clinically relevant knowledge within the realities of a clinical workload. For academic researchers, this form of engagement can assist them to produce research-derived evidence which meets the needs of clinical practice. For practitioners, a defined form of engagement is added to the research engagement continuum (Pighills *et al.* 2013) which offers further opportunity to engage in and with research, integrating research and practice and helping to meet professional expectations of delivering evidence-informed care through experiential development of individual research capacity (O'Byrne and Smith 2010). These consequences, therefore, can contribute to addressing the research-practice gap by offering a mechanism to improve both the clinical relevance and usefulness of a study and its findings. As demonstrated in *paper 3,* data were generated which supported the argument that this concept is necessary, through both the opinions of participants, and a comparison of the concept's key components against the principles of existing theoretical propositions, which illustrated the differences in these conceptualisations.

7.4 Contribution of the development of the concept of Researcher Practitioner Engagement

The conceptual model which resulted from the concept development clearly communicates the knowledge which has been developed from the first phase of this study, and therefore the contribution which has been made to the field of research and practice engagement within the healthcare arena. The participants within this phase believed that this new concept was necessary, were enthused by its ability to afford transparency and legitimacy for this type of engagement whilst also offering guidance to researchers and practitioners to ensure that this engagement is effective. Diagrammatic representation of the phenomenon using a conceptual model allows for the components of the concept to be succinctly captured and presented in an accessible format, shown to be a logical and useful progression by those who have previously used conceptual development techniques to produce comparable frameworks to guide practice in the field of evidence implementation (Kitson *et al.* 2008). For novice researchers hoping to engage practitioners in their research, the model clearly communicates the essential elements to be considered in their planning. For those who regularly engage with practitioners, this diagrammatic representation allows for reflective consideration of current practices to ensure that Researcher Practitioner Engagement has taken place. The content also clearly outlines the variables considered relevant to this concept to form a framework to inform the design of future studies from which empirical evidence can be generated to support the relationships hypothesised between these variables.

This concept also offers a vehicle to deal with some of the inconsistencies in the reporting of engagement practices which were noted in the scoping review carried out to inform this study (*paper 1*). It was concluded from the low yield of published examples sourced during this review, that reporting of nursing, midwifery and therapy practitioner engagement in the research process is limited. In addition, when engagement is reported, inconsistent and undefined terms are used to describe this activity, coupled with limited use of theory to guide engagement practices in order to realise outcomes which could positively impact the research-practice gap. Others too have noted the variation of terminology and the challenges caused when carrying out reviews in the engagement field (Malterud and Elvbakken 2019; Fransman 2018; Concannon *et al.* 2014), and so the need to achieve greater consensus on terminology to facilitate complementary research and facilitate the literature retrieval process has been recognised (Gagliardi *et al.* 2017). The concept offers the opportunity to address these issues through a now clearly delineated type of engagement with a distinguishing label and understanding of its antecedents, defining attributes and intended consequences. This now labelled and defined form of engagement should help researchers and practitioners to be more specific in identifying the type of engagement which is taking place, and so a dedicated literature base could evolve by encouraging both consistent use of the term ‘Researcher Practitioner Engagement’ to refer to this activity and sharing of examples of this engagement practice. Through wider dissemination (*paper 3*), the role of an emerging concept can be fulfilled by introducing it to the intended audience, in anticipation that it will be recognised, begin conversations, generate new examples and the concept then become further understood (Morse 2017).

Clinical care which is evidence-informed or evidence based requires the application of research-derived evidence by the healthcare workforce within their practice, and so requires practitioners to engage with research. Therefore, ensuring the healthcare workforce possess the capability to engage with research is of paramount importance within the UK health service (O’Byrne and Smith 2010). Barriers to research engagement, whether as research consumers or research producers, have long been voiced by practitioners. Lack of time and prioritisation of clinical work over research activity are often cited as the main challenges, alongside lack of skills and understanding of the value of research within clinical practice (Borkowski 2016; Bullen *et al.* 2014; Upton *et al.* 2014; Pighills *et al.* 2013; Dopp *et al.* 2012; Higgins *et al.* 2010). However, participants in Phase 1 of this study highlighted the opportunities this form of engagement creates for practitioners to develop an understanding of research and how it integrates with practice. Professional bodies strive to ensure a workforce with the confidence, capability and capacity to be both research literate and able to contribute to developing the evidence base within their profession (NMC 2014; RCOT 2019; Chartered Society of Physiotherapists Charitable Trust n.d). Therefore, this form of engagement adds a further category to the research engagement continuum (Pighills et al. 2013) which offers the healthcare workforce the opportunity to fulfil this professional requirement and develop as evidence-informed practitioners. Promotion of the conceptual model of Researcher Practitioner Engagement could therefore help organisations, managers, professional bodies and individuals, to recognise the potential value of this type of research engagement opportunity.

7.5 Methodological approach used to develop the concept

As outlined in chapter one, this study was initiated by a curiosity to explore if and how academic researchers engaged frontline practitioners in their research endeavours. Initially exploring this issue through examples retrieved from the literature, highlighted the need to shift the focus of the research question, by revealing that conceptual work which could contribute to addressing inconsistencies and vagueness in definitions surrounding engagement practices was necessary before exploratory work could be carried out. This renewed direction and purpose of the study necessitated selection of a methodological strategy that would robustly generate the data required to meet the objectives of both confirming the need for this proposed concept and identifying its key components. A novel approach was selected by taking time to critically evaluate the strengths and weaknesses of the approaches available to develop an emerging concept (Risjord 2009; Beckwith *et al.* 2008) against the objectives of the study and the immaturity of the concept under consideration (Morse 2017). Doing so, identified the need to adapt conventional approaches to ensure that in developing this concept, its key components were empirically identified in a methodologically robust manner and grounded in the experiences of both practitioners and academic researchers from the concept context. A number of strategic design decisions influenced by the question and the study context were made during the design phase, and the pragmatic approach adopted allowed for amendments to be made as potential threats to the robustness of the study were identified.

The use of a theoretical framework to guide research has been criticised for its potential to restrict what a researcher sees in the data (Dodgson 2019). Had the theoretical framework for this study remained solely the engagement paradigm (Bowen and Graham 2013), this may well have been the case, as the focus of any comparisons would have been against this co-production ideal. Extending the theoretical framework to include the hired hand approach (Roth 1966) was pivotal to this study as it allowed instances from the literature to be viewed using this different lens. Greater depth and weighting was therefore added to the proposition put forward that an undefined form of engagement had been observed through the comparisons that could be made between both these conceptualisations and the phenomenon that had been observed.

A further strength of this concept stems from the level of experience and diversity of backgrounds represented by the researchers and practitioners who contributed to its development. Participants were not sampled specifically for maximum variation (Green and Thorogood 2018), therefore, it cannot be claimed that the sample was empirically representative (Mason 2018). However, this was not the intention and a purposive approach taken to the recruitment strategy resulted in contributions to the concept development from researchers and participants from a range of contexts, disciplines, roles and varying experiences. This diversity, particularly across the group of academic researchers, reflects the complex landscape in which Researcher Practitioner Engagement takes place and the different settings in which it can be experienced. The opportunity for discussion amongst these participants from varied backgrounds, afforded through the use of online focus groups, enabled the concept to be distilled to its key components which can then be applied generically in this range of settings (Morse 2017). Further contextual data were also derived from these discussions to ensure the maximum contextual data were provided to inform Phase 2 of the study.

7.5.1 Reflexivity

Throughout the study, a journal was maintained by the researcher to consistently record reflective notes and document reflexivity. In light of the word limit of this thesis, selected excerpts from this journal have been collated in Appendix 12 to allow for detailed evidence of reflections and reflexivity to be presented.

Recording of internal dialogue and interpretations formed a key element of the analytical phase within Phase 1, in which the researcher stood back from fieldwork findings and reconsidered these in light of the initial focus of interest (Schwartz-Barcott and Kim 2002). As a clearly defined, formal stage within the concept development (Schwartz-Barcott and Kim 2000), this analytical and interpretative process was presented as part of the study's findings (Appendix 21). Doing so afforded transparency on how the outcome of this phase was reached, adding to the integrity of the study (Tracy 2010). Using the researcher's own voice, the detailed nature in which these findings are presented demonstrate clearly the dialogue between the theoretical phase findings, the fieldwork data and the researcher's interpretations (Appendix 21). This transparency supports and evidences the rationale as to how and why each of the concept components were refined, eliminated or expanded. Inclusion of these findings therefore transparently demonstrates interpretations and the role of the researcher in the generation of data and the study outcomes (Appendix 21).

As this phase adopted a qualitative approach, reflexivity was also essential to ensure critical thought was given throughout to any influence the researcher may have had on the research process (Tracy 2010). As the central actor, critical evaluation by the researcher is necessary to establish if and how subjectivity was introduced and could have influenced the data collection and analysis processes (Finlay 2002). Described by Berger (2015, p.220) as 'critical self-evaluation of positionality', reflexivity was crucial within this study due to the insider role of the researcher and the wider research team (Finefter-Rosenbluh 2017). As appraised in greater detail in Appendix 12, this insider role may have enhanced the study design through understanding of the study's context and introduced a positive influence on elements such as access to the field during the recruitment process (Berger 2015). However, as appendix 12 details, through self-appraisal, potential for influences on the data collected could have been introduced by the researcher's understanding of the phenomena gained from immersion in the data from the theoretical phase, and a desire to establish the concept was necessary. Therefore, actions were taken to minimise any potential influence (see chapter three and appendix 12).

The detail within Appendix 12 provides evidence of reflexivity and clearly demonstrates how the researcher came to develop an understanding of their role within the study. Positionality is considered in detail as is locating of the researcher in relation to the topic and the participants. Unanticipated ethical challenges that arose during the fieldwork phase, caused by use of online audio-visual technology to host focus groups, and evaluation of the resultant potential implications for this study were also documented in the researcher's reflective journal. Awareness of the value of these reflections to other researchers, in light of sparse literature relating to this novel method of data collection, prompted analysis and dissemination of this evaluation through the International Journal of Qualitative Methods (*paper 2,* chapter three). Doing so, made a methodological contribution to the body of knowledge in this field. Aimed at those who are novice or required to further develop their learning in using this data collection method, this article reviews lessons learned from previous publications and combines this with learning from the focus groups undertaken as part of this study. A contribution to knowledge is therefore made by raising awareness and developing understanding of key areas for consideration to optimise the ethical and methodological robustness of a study.

7.6 Implications of Phase 2 findings for the concept of Researcher Practitioner Engagement

Merging the data from both phases of this study (chapter six), allowed for critical consideration of Phase 1 findings and assisted in addressing objectives 1 and 2. Although caution is necessary due to the low sample achieved in Phase 2, the data derived from those who participated in this online survey helped to highlight aspects which will require consideration in further development of the concept and in future research.

Findings from Phase 2 show that despite not referring to the engagement they experienced as co-production, efforts were made by some researchers to engage practitioners in most of a study's activities. As also observed in the scoping review (*paper 1*), this limited use of guiding theory adds further weighting to the need for theoretical guidance to support engagement practices. Although engagement can be considered to be behavioural and/or attitudinal (Hearle and Lawson 2019), the survey focussed on behaviours as opposed to attitudes, and adopted a quantitative approach, therefore, further exploration of why theoretical support was lacking was not possible. Reasons could be surmised; the type of engagement experienced perhaps was not deemed to fit with any existing theoretical proposition, thereby supporting the need for the concept of Researcher Practitioner Engagement, or the need to use a guiding theory was perhaps not recognised or deemed necessary. Phase 2 data also contributed to objective 2 by demonstrating that the majority of researchers who responded to a call to share their experiences of engaging practitioners in the research process, do not appear to be achieving a level of engagement that could be seen to align with the ideals of the engagement paradigm.

A conclusion can perhaps be drawn from these data as that it appears that, regardless of the number or combination of activities in which a practitioner was engaged, there was a perception from researchers that the clinical relevance of the study had been influenced. Researchers' perceptions that the clinical relevance of a study had been influenced by practitioner engagement across the board, challenges the element of the engagement paradigm which necessitates engagement in all or most study activities, suggesting perhaps that it is not the number of activities in which the practitioner is engaged, but other factors which could influence outcomes. In the absence of proof to support the need for evidence to be co-produced in the way in which the engagement paradigm advocates, it is difficult to argue for this ideal. However, this initial finding from this small sample must be considered cautiously. While many of the studies reported on in this survey were still ongoing, it is encouraging that, despite this ongoing status, improved clinical relevance is perceived; how this has been established and if it is apparent from the receiving practitioner's perspective to be relevant to practice remain unknown. In addition, although an influence on clinical relevance has been perceived, whether to improve clinical relevance of the study formed part or all of the motivation to engage a practitioner in the research process also remains unknown.

As highlighted throughout chapter six, data derived in Phase 2 prompted critical reflection on wording within the conceptual model. For example, the need for attribute 3 to potentially be more explicit about the benefits that should be experienced or if these should be linked directly to the concept consequences. However, these changes are surmised at present, and due to the small sample size, changes cannot yet be confidently made and so should be considered further as the concept is developed.

7.7 Areas for further development of the concept of RPE

When merging the data from both phases, areas for development of this concept were illuminated. These are considered in greater detail below.

7.7.1 Evaluation of Researcher Practitioner Engagement

Despite the postulated benefits of practitioner engagement in the research process (McCormack 2011; Pentland *et al.* 2011), the scoping review observed that objective evaluation of the impact of this engagement is sparsely reported. Although more than half of the papers included in the review were of an evaluative nature, evaluation tended to focus on subjective outcomes, and a tendency towards identification of barriers and facilitators as opposed to any effects on the research-practice gap (*paper 1*). In addition, when establishing the theoretical framework for this study, although the engagement paradigm is considered the ideal, it appears to be underpinned by an assumption, as little evidence could be found to support its claims, that engagement of research users in this way will improve the clinical relevance of a study. What still remains unclear, therefore, is how this engagement can be evaluated.

Within the concept of Researcher Practitioner Engagement, two levels of measurement need to be considered. Firstly, in line with the definition of a concept (Rodgers 2000), it must be ensured that all attributes are present for the concept to occur. Secondly, effective ways to measure the outcomes of this form of engagement must be identified so both researchers and practitioners can ensure and demonstrate that the intended consequences have been achieved, and an evidence base for this practice developed. Neither participants from Phase 1 or 2 could shed much light on ways to demonstrate how the outcomes of engagement could be measured or demonstrated, a view shared by others who have recently reviewed the engagement of NHS staff in research (Marjanovic *et al.* 2019). This highlights an aspect of the conceptual model that requires further development and to which neither the data from this study nor existing evidence can currently contribute.

In its current form, the conceptual model hypothesises, from the experiences of researchers and practitioners, what are believed to be the essential factors required for this form of engagement to be effective in ensuring a study has clinical relevance, and which can now be used as a framework for future research to provide the empirical evidence to support these claims. The abductive nature of this concept development enabled the study to show what might be (Meyer and Lunnay 2013) whereas further evaluation using this proposed conceptual model can provide data to prove or disprove that this is the case. By now applying this model in practice, examples can be generated (Morse 2017). More research is required to test the claims of the relationship between the attributes and the outcomes of the concept to have greater confidence in their relationship. With engagement of practitioners in research methodology clearly linked to the impact agenda (McCormack 2011), evidence to support claims of the ability of this engagement to galvanise impact will be imperative to drive this culture forward.

7.7.2 Weighting of concept components

In addition to testing the proposed relationship between the attributes of the concept and the outcomes, consideration should also be given to the weighting of attributes. Within the concept development, no consideration was given to the prioritisation of attributes or to establishing if each is of equal weighting. As data from Phase 2 illustrate, when researchers have engaged practitioners in studies, in the main, most of the attributes are considered to be present, albeit to varying degrees. Predominantly, five-point Likert scales were used to meet the objective of identifying the extent of the presence of the concept components, with two response options given on each side of the neutral point. Of course, subjectivity can still affect these ratings as what one respondent might consider '*some of the time'* could equate to another's perception of '*most of the time'*. The use of this scale was introduced following expert review of the survey tool, as it was suggested that yes/no responses could affect validity. Despite this potential for subjectivity, doing so has provided greater insight into addressing the objective of investigating the extent of the presence of each concept component as opposed to simply establishing its presence. However, it is unclear the extent to which each attribute is essential or if one or more elements can make a greater or lesser contribution to achieving the intended consequences.

Of particular note, it was observed in Phase 2 that the attribute least experienced from the researcher's perspective was that of equity between the practitioner and the researcher. In addition, practitioners were reported to have problem solved with the researcher more frequently than making decisions in relation to study activities together. This combination of the absence of equity and decision making are key elements which makes this form of engagement stand apart from the principles of the engagement paradigm. However, what is not clear, nor could be established via this study, is if this situation is representative of Researcher Practitioner Engagement, or if these elements are not in place because they have not been enacted or the need for their presence, recognised by the researcher. These elements need further investigation to establish if problem solving is adequate to achieve the consequence of influencing the clinical significance of the study or if joint decision making should indeed remain as a defining concept component. The small sample size achieved did not allow for statistical testing of relationships between attributes and consequences, so the data derived can make little contribution to addressing this issue at this stage. Therefore, this is an area that will need further consideration when future research is conducted which contributes to the development of this concept and the conceptual model.

7.8 Strengths of the study

Strengths of this study have been highlighted through consideration of the contribution to knowledge made by this study (section 7.4) and the evaluation of the novel methodological approach adopted in Phase 1 (*paper 3*; section 7.5). A further strength to acknowledge is the originality of this work. Since this PhD commenced, work in the field of Integrated Translation (IKT) has developed at pace, facilitated by the birth of the IKT network in 2017 (Graham *et al.* 2019). As a result, findings are emerging and several investigations are in progress, which will shed further light on the facilitators, challenges and mechanisms in relation to the ideal of the engagement paradigm. However, none of this work focusses specifically on engagement with frontline practitioners, but on subgroups such as policy makers, patients and the public and, in addition, tends to often concern meso levels of organisational partnerships as opposed to micro level relationships.

Additionally, as discussed in section 7.2, the important issue of engagement of practitioners in research by clinicians in the United Kingdom appears to be gaining traction. However, this work is inclined to focus on research initiated and conducted within healthcare organisations, as opposed to the specific context addressed by this study when research is initiated from within the academic institution. In the UK, the health research landscape and the ways in which research and practice intersect is complex, demonstrated by the reasons for exclusion from this study such as Clinical Research Nurses, practitioners in clinical academic roles, and the organisational partnerships which continue to evolve. This varied landscape was also mirrored by those who volunteered to take part in Phase 1 and those who responded to the Phase 2 survey but were subsequently excluded as their experience of the research practice interface came from these alternative contexts. Hence, a strength of this study is its originality, in its explicit focus on academically initiated studies and on a subgroup of stakeholders in health research who are rarely considered in isolation, yet as clearly outlined in chapter one, are deemed to be important actors in the knowledge production process.

In addition, the researcher has paid close attention to Tracy's (2010) criteria for the evaluation of qualitative research. In addition to the steps addressed in chapter three to optimise the trustworthiness of this study, the researcher has strived to ensure meaningful coherence by achieving the intended study aims through appropriate methods, and presenting meaningful connections between literature, theory, findings and interpretations (Tracy 2010). Procedural ethical considerations were made throughout and have continued beyond data collection and analysis through the dissemination of findings, which will be shared directly with Phase 1 participants (Tracy 2010).

7.9 Limitations of the study

In both Phases of this study, there was a distinct contrast in the success of recruiting one population (academic researchers) over the other (frontline practitioners). Challenges experienced in recruiting frontline practitioners within both phases and the impact on the sample realised, is therefore a potentially limiting factor in this study. As a result of these challenges, in Phase 1, the disciplines of nursing and midwifery were not represented in the practitioner focus groups. Additionally, an insufficient number of practitioners volunteered to enable a triangulation group of practitioners to be convened. Whilst in Phase 2, just one of the practitioners who returned a questionnaire met the study criteria. It is unclear if the ability to adopt a direct approach to recruit researchers via personalised invitations to their email accounts versus the opposing blanket approach taken to the recruitment of practitioners was the main contributor or if other factors were at play. During the study, the recruitment strategy was developed to incorporate varied approaches to expose the study to relevant practitioners.

There is a growing trend among health professionals to use social media platforms professionally (Jackson 2019; Rolls *et al.* 2016) and as a recruitment strategy (Wilson 2017). However, it was quickly recognised that reliance on this approach would only reach a small proportion of the intended population and alienate those who do not use social media. Extending exposure of the study to readers of publications distributed by professional bodies addressed this issue in part. Again, however, this was limited to active readers and restricted by the study budget when publications specific to the nursing population commanded high fees.

Taking the decision in the design stages to not obtain NHS research governance approvals as part of the study recruitment strategy has potentially contributed to the difficulties faced. The desire to adopt a nationwide approach underpinned the reasoning to adopt a blanket approach to recruitment that would not introduce selection bias. Ensuring parity by approaching R&D personnel within all NHS organisations in the UK was not deemed practical within the timescales of the study. However, with hindsight, making dedicated time to obtain NHS approval to strategically engage a purposive sample of

Trusts in which practitioners named within study protocols could be identified, may have increased recruitment success. The challenges practitioners face in engaging with research are already known (Clark and Thompson 2019; Matus *et al.* 2019). The outcome of this study itself clearly points to the importance of ensuring practitioners see the value and meaning of a study in order to engage. Therefore, as a new concept, the topic of this study may not have initially resonated with some practitioners in the recruitment communication. Learning from this experience can be taken forward into the design of future studies by ensuring more effective strategies are adopted which facilitate this personalised approach, with the value of the study central.

Despite recruitment challenges, across the practitioners who did take part, a number of points were raised which influenced the final outcome. Although saturation was not intended, there was consistency noted in the points which were made. All disciplines were also represented by the researchers. However, it is important to note that analysis of Phase 1 data demonstrated the factors which are of importance to practitioners within the engagement process. In addition, not only at times did researchers and practitioners' perspectives of a situation vary, but researchers also reported being unaware of elements of the practitioners' experiences, for example, whether they perceived they had gained any benefit from the process. This is congruent with previous studies in which researchers believed they engaged more actively with practitioners than the practitioners believed to be the case (Carrington *et al.* 2016; Pelicano *et al.* 2014). More importantly, in consideration of the nature of the outcomes of a hired hand approach, only practitioners will be qualified to determine when this form of engagement has been experienced. Therefore, more research which explores this type of engagement from the practitioner’s perspective is imperative for Researcher Practitioner Engagement to be further understood.

In the opening sections of this thesis, curiosity around if and how academic researchers engage frontline practitioners in their research endeavours was asserted. The nature of this study concerned ‘how’ by considering the variations in engagement forms that are reported to be experienced. What this study has been unable to establish is the extent of engagement, that is, the ‘if’ element, and so the proportion of researchers who actively engage practitioners is unknown.

7.10 Recommendations

Across the discussion sections of *paper 1* and *paper 3*, and within chapters six and seven of this thesis, recommendations have been made based on observations from the literature and the findings of this study. Recommendations are made in relation to both further developments of this concept and the advancement of a culture of Researcher Practitioner Engagement within healthcare research across the disciplines of nursing, midwifery, occupational therapy, physiotherapy and speech and language therapy.

The concept of ‘Researcher Practitioner Engagement’ can be further developed by:

- translating the content of the conceptual model of Researcher Practitioner Engagement into a useable format, such as a checklist, to assist in the planning and monitoring of engagement practices
- testing and development of the checklist through further research

- establishing if the findings of further research (see below) can provide greater confidence in the tentative definition of Researcher Practitioner Engagement
- giving further consideration to changes to concept component wording surmised from the integration of Phase 1 and Phase 2 data (chapter six)

A culture of 'Researcher Practitioner Engagement' can be developed by:

- dissemination of the conceptual model of Researcher Practitioner Engagement to open up professional discussions about this form of engagement
- encouraging consistent use of the term Researcher Practitioner Engagement within literature and practice to refer to this engagement form
- an expectation from research funders and approval bodies of evidence of Researcher Practitioner Engagement within applications to demonstrate the intent to improve clinical relevance
- sharing the outcomes of this study, good practice examples and future research to increase recognition amongst practitioners, their managers, practice organisations and professional bodies of the value of this form of engagement as a way to facilitate practitioners' engagement with research

Further research is required to:

- provide empirical support of the claimed relationship between the attributes and consequences of the concept of Researcher Practitioner Engagement to provide empirical support of their relationship
- establish any priority weighting of each concept attribute and/or extent to which its presence is required for Researcher Practitioner Engagement to occur
- identify how each of the concept attributes can be measured or demonstrated to ensure they are present
- explore the concept further from the practitioners' perspective
- build empirical case studies which allow for mechanisms which facilitate concept components to be explored
- explore how the consequences of Researcher Practitioner Engagement can be demonstrated and evaluated
- test the amendments to concept components which were inferred from the integration of Phase 1 and Phase 2 data
- explore academic researchers' attitudes towards the engagement of practitioners in the research process, specifically their intentions/motivations for doing so

7.11 Conclusion

Although co-production ideals in which practitioners and researchers play an equal role throughout is often advocated, findings from this study suggest that other forms of engagement are more likely. Establishing ways in which academic researchers have reported to engage nursing, midwifery and therapy practitioners in the research process identified a form of engagement which had not yet been conceptualised. By proposing and developing a concept which labels and defines this form of engagement, grounded in the experiences of academic researchers and frontline practitioners, the defining attributes, antecedents and consequences have now been established.

The essence of this form of engagement, now labelled ‘Researcher Practitioner Engagement’, ensures practitioners’ clinical perspectives influence the design of a study from the early stages. Such engagement is postulated to improve the clinical relevance of a study whilst contributing to building research capacity and developing clinical practice. This form of engagement offers practitioners the opportunity to integrate research within their clinical role. Researchers are supported in their endeavour to balance rigour with clinical relevance and so enhance the utility of a study and its findings. Illustrating the key components of this concept within a model can 1) introduce it to research and practice audiences to open up professional discussions around this form of engagement 2) guide engagement practices, 3) encourage use of this novel term to create and build a consistent literature base of examples of this type of engagement, and 4) enable structuring of future empirical investigations to strengthen and develop this conceptual model further.

In addition to a conceptual contribution, this PhD study has also made methodological contributions by using a novel approach to concept development and adding to the existing body of knowledge in relation to using audio-visual technology to conduct online focus groups.

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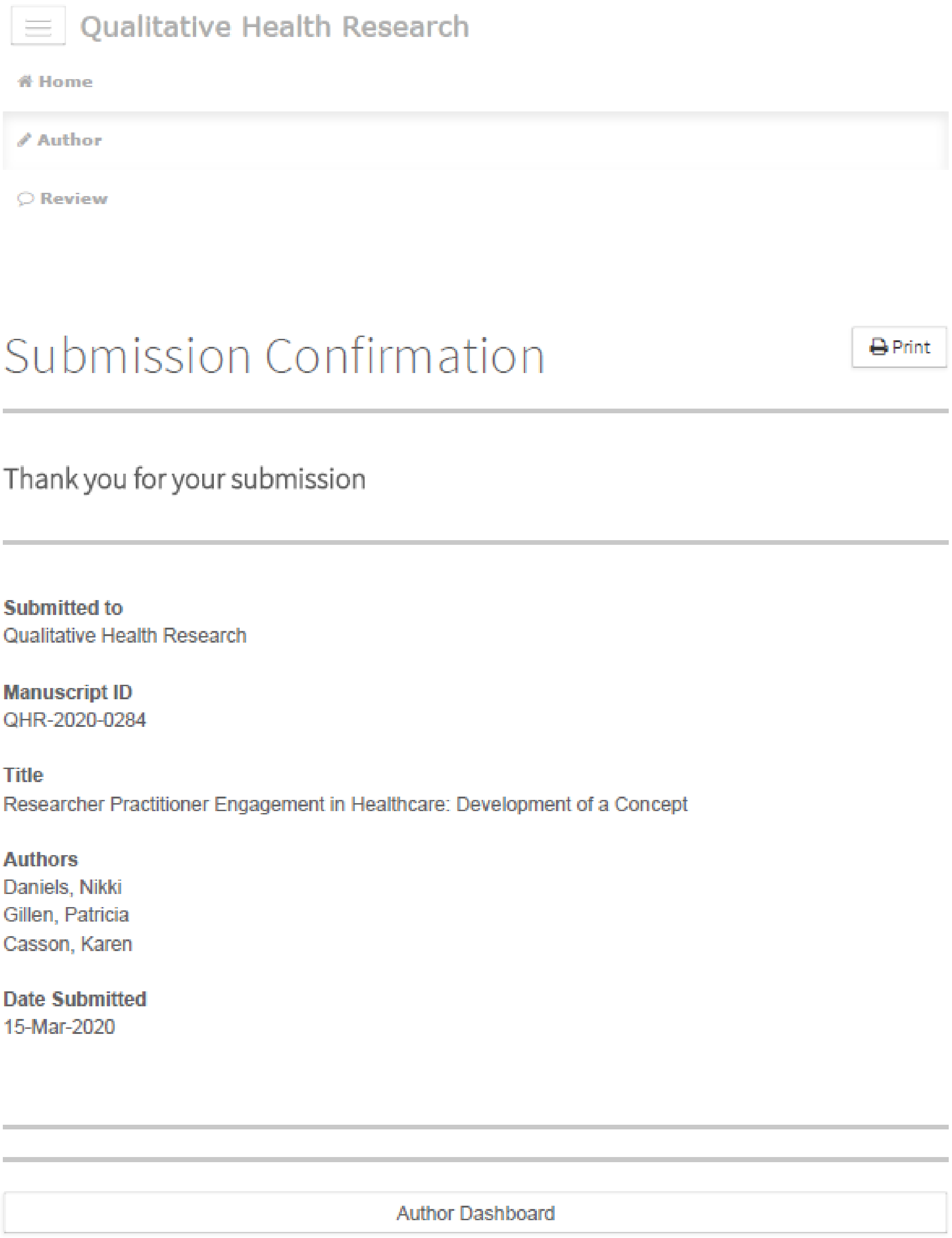
Appendices

Appendix 1: Evidence of submission of paper 3 to peer reviewed journal



Submission Confirmation

Thank you for your submission

Submitted to
Qualitative Health Research

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Title
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Authors
Daniels, Nikki
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Date Submitted
15-Mar-2020

Appendix 2: Search Terms

Search 1
Research* N3 Practi* N3 Collaborat*
Research* N3 Practi* N3 Engage*
Research* N3 Practi* N3 Partner*
Research* N3 Practi* N3 Co-produc*
Research* N3 Practi* N3 Involve*
Research* N3 Practi* N3 IKT OR ‘Integrated Knowledge Translation’
Research* N3 Clinic* N3 Collaborat*
Research* N3 Clinic* N3 Engage*
Research* N3 Clinic* N3 Partner*
Research* N3 Clinic * N3 Co-produc*
Research* N3 Clinic* N3 Involve*
Research* N3 Clinic* N3 IKT OR ‘Integrated Knowledge Translation’
Research* OR (MH Research) AND
Academic* N3 Practi* N3 Collaborat*
Academic* N3 Practi* N3 Engage*
Academic* N3 Practi* N3 Partner*
Academic* N3 Practi* N3 Co-produc*
Academic* N3 Practi* N3 Involve*
Academic* N3 Practi* N3 IKT OR ‘Integrated Knowledge Translation’
Research* OR (MH Research) AND
Academic* N3 Clinic* N3 Collaborat*
Academic* N3 Clinic* N3 Engage*
Academic* N3 Clinic* N3 Partner*
Academic* N3 Clinic* N3 Co-produc*
Academic* N3 Clinic* N3 Involve*
Academic* N3 Clinic* N3 IKT OR ‘Integrated Knowledge Translation’
Nurs* N3 Research* N3 Collaborat*

Nurs* N3 Research* N3 Engage*
Nurs* N3 Research* N3 Partner*
Nurs* N3 Research* N3 co-produc*
Nurs* N3 Research* N3 involve*
Nurs* N3 Research* N3 IKT OR ‘Integrated Knowledge Translation’

Midwi* N3 Research* N3 Collaborat*
Midwi* N3 Research* N3 engage*
Midwi* N3 Research* N3 partner*
Midwi* N3 Research* N3 Co-produc*
Midwi* N3 Research* N3 involve*
Midwi* N3 Research* N3 IKT OR ‘Integrated Knowledge Translation’

Therap* N3 Research* N3 Collaborat*
Therap* N3 Research* N3 Engage*
Therap* N3 Research* N3 Partner*
Therap* N3 Research* N3 co-produc*
Therap* N3 Research* N3 Involv*
Therap* N3 Research* N3 IKT OR ‘Integrated Knowledge Translation’

Allied Health Profession* N3 Research* N3 collaborat*
Allied Health Profession* N3 Research* N3 engage*
Allied Health Profession* N3 Research* N3 partner*
Allied Health Profession* N3 Research* N3 co-produc*
Allied Health Profession* N3 Research* N3 involv*
Allied Health Profession* N3 Research* N3 IKT OR Integrated Knowledge Translation’

AHP* N3 Research* N3 collaborat*
AHP* N3 Research* N3 engage*
AHP* N3 Research* N3 partner*
AHP* N3 Research* N3 co-produc*
AHP* N3 Research* N3 involve*
AHP* N3 Research* N3 IKT OR Integrated Knowledge Translation’

Search 2
stakeholder* AND engagement AND practitioner* AND research*
AND clinician*
AND nurs*
AND *therap*
AND midwi*
stakeholder* AND involve* AND practitioner* AND research*
stakeholder* AND involve* AND clinician* AND research*
stakeholder* AND involve* AND nurs* AND research*
stakeholder* AND involve* AND midwi* AND research*
stakeholder* AND involve* AND *therap* AND research*
stakeholder* AND collab* AND practitioner* AND research*
stakeholder* AND collab* AND clinician* AND research*
stakeholder* AND collab* AND therap* AND research*
stakeholder* AND collab* AND nurs* AND research*
stakeholder* AND collab* AND midwi* AND research*
stakeholder* AND partner* AND practitioner* AND research*
stakeholder* AND partner* AND clinician* AND research*
stakeholder* AND partner* AND therap* AND research*
stakeholder* AND partner* AND nurs* AND research*
stakeholder* AND partner* AND midwi* AND research*
stakeholder* AND co-produc* AND practitioner* AND research*
stakeholder* AND co-produc* AND clinician* AND research*
stakeholder* AND co-produc* AND therap* AND research*
stakeholder* AND co-produc* AND nurs* AND research*
stakeholder* AND co-produc* AND midwi* AND research*
Search 3
“knowledge user” AND engagement
“knowledge user” AND involvement

Search 4
“Researcher Practitioner Engage*”
“Practitioner Researcher Engage*”
Researcher Practitioner Engagement
Practitioner Researcher Engagement
Search 5
“data collector” AND
Nurs* OR Midwif* OR *Therap* OR clinician OR practitioner
“recruiter” AND
Nurs* OR Midwif* OR *Therap* OR clinician OR practitioner

Appendix 3: Pilot Study Phase 1 Fieldwork: Process and Outcome

Date: 16th May 2018

Time: 13:00 to 14:10 (70 minutes)

Participants: PhD researchers, Institute of Nursing and Health Research, Ulster University (n=5)

Recruitment strategy: Blanket email to all PhD researchers. Self-referring based on eligibility criteria

Objectives:

1) To test recruitment processes and evaluate associated paperwork
2) To test the chosen audio-visual software for suitability to host and record a focus group
3) To test the focus group schedule
4) Evaluate any potential influence on the discussion based on my own pre-understanding and knowledge gained from theoretical phase
5) To test the analytical framework
6) Evaluate participant experience of taking part in the focus group
7) Identify any actions required prior to commencing main data collection

Evaluation: SurveyMonkey 10 item questionnaire

Table A1: Outcome of Phase 1 fieldwork pilot study

Objective	Specific Considerations	Evaluation	Outcomes	Actions to be taken
Test recruitment processes	Study inclusion criteria and self-identification of eligibility process Recruitment documentation (PIS, informed consent form) Communication and organisation of focus group	Participant evaluation via SurveyMonkey Researcher reflections recorded in journal	One participant questioned their eligibility to take part via email	Devise detailed recruitment questionnaire to guide potential participants with self-selecting recruitment process
Test the chosen audio-visual software for suitability to host a focus group	Ability to make and store audio and visual recordings securely and efficiently User friendliness of software for participants (logging on etc) Additional support that may be required by participants to facilitate participation Test ‘share presentation’ function Suitability of online environment for interactive discussion Raise awareness of any technical issues which may arise before or during the group for the facilitator or participants	Participant evaluation via SurveyMonkey Researcher observation of participant behaviour, difficulties noted during focus group	One participant chose to log in via a mobile phone which incurred additional costs Participant feedback that any more participants may have limited opportunity to contribute Some participants dominated; ensure all are given opportunity to provide opinion	Disable mobile option in group software settings Pre-record presentation for consistency Limit participants to five per group Find out if there is a ‘hands up’ or similar function to avoid talking over Set ground rules (respect, confidentiality, speaking across) – this can be written on a PowerPoint as rules agreed at the beginning

				Need to ensure all voices heard, control discussion if dominance occurs, be aware of participants who are not contributing and be astute – is this because they are being prevented from contributing/assess dynamics. Write questions out in a table and tick each off as the focus group progresses. Also have a column for comments if anything arises that I want to return to later in the discussion
Test the focus group schedule	Process of sending outcome of theoretical phase sent prior to the focus group Introductory presentation to focus group outlining study background, purpose and format of focus group Time allocated to address all questions Ability of focus group questions to meet the study objective	Record timing of group Participant evaluation via SurveyMonkey Analyse data to ensure objective of fieldwork phase can be achieved Critically reflect on ability of questions to meet study objective Researcher reflexivity Researcher reflections via	70 minutes (10 minutes over scheduled time) There was little data collected that was not in line with the objective. There was however little verbal or non-verbal confirmation as to whether concept components were relevant or not; woolly	Use of probing to ensure responses allow affirmation of relevance of each component or changes proposed Pilot data will not be included in the main study

		journal	Clear thorough questioning and responses that experiences were not all fully in line with study inclusion criteria and as all are PhD students, do not have the level of experience that it is hoped the main study participants will have (so it could be argued that this affected the researcher's ability to fully test the suitability of the focus group schedule)	data analysis Use of a detailed recruitment survey to establish study criteria is met prior to participation Lesson learnt for future pre-testing in research re importance of authentic participants
Reflect on my skills as a facilitator **Determine any influence on the discussion based on my own pre-understanding and knowledge gained from theoretical phase**		Participant evaluation via SurveyMonkey Researcher reflexivity	Participant feedback Listening to recording/reflexivity identified that on occasions I shared knowledge from theoretical phase to a) give examples from the literature to confirm, illustrate, expand or contradict what was said b) give example from the literature to give participants greater understanding of the concept component	In order to a) provide more detail in the presentation to summarise background and theoretical phase b) use rephrasing to ensure components understood c) ensure contributions expand on theoretical phase to ensure understanding and do not offer personal opinion or steer discussion/remain detached d) keep a reflexive diary throughout all focus groups to record thoughts on the

			and why it had been included Overlooked introductions Participants behaviour was very respectful; appreciate that this could be attributed to them knowing each other in the real world as they are all from the same department; this will not be reflective of the main focus groups No introductions were required so not reflected in the timing	data and record any influences for transparency Ensure time for introductions
Test analytical framework	Suitability of NVIVO to manage data analysis Areas for researcher development using NVIVO software	Data analysis in NVIVO using analytical framework	Does presentation need to be transcribed? In order to keep transcription costs down	Transcribe presentation once for records Seek further NVIVO training
Evaluate participant experience		Anonymous online evaluation survey post focus group (n=4/5 responses) Researcher observations and reflections	*“I would suggest a short paragraph introducing the researcher so her background and reason for the research is clear”* *“the only thing I would suggest is for the researcher to be a little more impartial in their*	Add to presentation Ensure contributions expand on theoretical phase to ensure understanding and do not

			participation and to try and not offer as much of their own opinion” *“allow a chance for introductions at the start of the focus group. It would break the ice and help if people knew what backgrounds everyone came from”*	offer personal opinion or steer discussion/remain detached Ensure time for introductions

Table A2: Participant feedback following evaluation of Phase 1 fieldwork pilot study

Question		Participant feedback
Participant Recruitment	Please indicate in the box below if you have any feedback on how you were recruited to this pilot study (for example wording of the invite email, understanding of inclusion criteria)	**Pilot Participant 1:** I thought the invite email was good and explained the study well **Pilot Participant 2**: Happy with how I was recruited. **Pilot Participant 3**: Very clear **Pilot Participant 4**: I wasn't sure if I met the inclusion criteria but was quickly clarified that I did
	Please indicate in the box below if you have any feedback on the wording of the Participant Information sheet you were sent prior to the pilot focus group (for example, format, any points that were not clear, wording etc)	**Pilot Participant 1**: I would suggest a short paragraph introducing the researcher so her background and reason for the research is clear **Pilot Participant 2:** Clear **Pilot Participant 3:** The participant information sheet was very clear and read well **Pilot Participant 4:** No response given
	Please indicate in the box below if you have any feedback on the Informed Consent form you were sent prior to the pilot focus group for example, format, any points that were not clear, wording etc)	**Pilot Participant 1:** The consent form was very comprehensive **Pilot Participant 2:** Very detailed and clear **Pilot Participant 3:** The consent form covered all relevant points or concerns. Clear and easy to read the table. **Pilot Participant 4:** No response given
Theoretical Phase Introductory	Please indicate in the box below if you have any feedback on the pre-reading you were sent prior	**Pilot Participant 1:** Looks fine to me **Pilot Participant 2:** Reads well and informative

communication re study	to the pilot focus group for example, format, any points that were not clear, wording etc)	**Pilot Participant 3:** The supporting information form was well laid out. I liked the introduction, the use of a table and explanation of what was meant by the terms, and then leading to the definition at the end **Pilot Participant 4:** No response given
	Do you have any feedback you would like to provide to the researcher in relation to the brief presentation made at the opening of the pilot focus group?	**Pilot Participant 1:** The presentation was clear. The Information in the shapes on the PowerPoint presentation could have been larger to make it easier to read **Pilot Participant 2:** It was helpful to understand what work had been done in terms of the literature search so I could understand how the themes for the focus group were developed **Pilot Participant 3:** Could see slides more clearly when I moved the boxes with participants faces in. Maybe advise it's ok to move things around the screen **Pilot Participant 4:** The brief presentation at the start consolidated the information previously given and gave a good introduction to the focus group. The number of slides presented was ample for the time
Facilitation	Do you have any feedback you would like to provide the researcher on how the pilot focus group was conducted?	**Pilot Participant 1:** The researcher did a good job in facilitating the focus group. The only thing I would suggest is for the researcher to be a little more impartial in their participation and to try and not offer as much of their own opinion **Pilot Participant 2:** It was really helpful being able to see the slides. This acted as a reminder of the key elements I was being asked to reflect on when other people were talking so I didn't get side-tracked **Pilot Participant 3:** Very clear rationale and layout. Discussion flowed well and the interviewer probed and asked appropriate questions. Good work **Pilot Participant 4:** The focus group was well conducted, and Nikki gave clarification when needed regarding the questions, paused to give people time to think, and gave time after individuals had spoken to allow anyone else to contribute. Nikki also checked at the end of each question to see if anyone wanted to add anything else, but also made it clear that we could anything else further on if we wished. The focus group ran slightly over time but this was probably balanced out by the delay in starting
Participant experience	Do you have any suggestions you would like to make to the researcher on changes that could be made to the focus group to enhance your experience as a participant?	**Pilot Participant 1:** It would be good, especially in a focus group situation where the participants don't know each other to allow a chance for introductions at the start of the focus group. It would break the ice and help if people knew what backgrounds everyone came from. **Pilot Participant 2:** I think the number of participants was just right. I

		wouldn't go for anymore as it might not be possible for everyone to get their views across in a bigger group **Pilot Participant 3:** No suggestions. **Pilot Participant 4:** No response given
Audio-visual software	Do you have any feedback you would like to provide the researcher on the usability of the Zoom software that was used to facilitate the online focus group?	**Pilot Participant 1:** I thought the software worked really well. Much better than more popular brands! There were a few minor issues with sound and lighting so it would be good to have clear instructions how to fix things at the participants' end if necessary **Pilot Participant 2**: It was excellent easy to use and had good sound and picture quality **Pilot Participant 3**: Zoom was easy to use and was excellent software to conduct a focus group **Pilot Participant 4:** I was very impressed with the webinar software

Appendix 4: Phase 1 Fieldwork Recruitment Strategy

Table A3: Recruitment Strategy Phase 1 Fieldwork (Academic Researchers)

Recruitment process	Sampling details
Target population: Healthcare researchers employed by UK universities, who have engaged practitioners in the research process	**Inclusion criteria** Based in faculty/college of health-related subject areas within a Higher Education Institute in the United Kingdom Health research studies completed within the past 3 years Self-reported experience of engagement with nursing, midwifery or therapy practitioners in at least one research project in the past 3 years **Exclusion criteria** Employed solely within a health care provider organisation Based within an organisational/systems level model specifically funded to facilitate engagement between academic and health organisations (for example CLARHC)
Strategy 1: 84 healthcare faculties within HEIs are registered with the Council of Deans for Health. The websites of each faculty will be searched to source contact details of heads of school and research centre leads in which nursing, midwifery or therapy programmes are offered. Email invitations will be sent to each identified lead with a request to cascade to appropriate colleagues The webpages of UK health research funders on which protocol summaries of studies are made publicly available, will be systematically searched to identify the studies in which engagement with a nursing, midwifery, occupational therapy, physiotherapy or speech and language therapy practitioner in an element of the study is stated for example,	**Purposeful sampling technique** Target sample size 12-15 Number of focus groups: 3 Triangulation group Target sample size 8-10 Number of focus groups: 2 An online screening questionnaire will be used to establish if volunteers meet the study inclusion criteria **Sampling frame/over recruitment strategy**

recruitment, delivery of study intervention) UK Research and Innovation (https://gtr.ukri.org/) and UK Clinical Trials Gateway (https://www.ukctg.nihr.ac.uk/) NIHR Research Projects Library (https://www.journalslibrary.nihr.ac.uk/programmes/) A recruitment flyer will be emailed to identified contacts with a covering invitation email which requests cascading to appropriate colleagues ***Strategy 2:*** Should strategy 1 fail to provide an adequate sample, social media (Twitter) will be used to cascade and draw attention to the invitation to participate to academic health researchers. Specific research related accounts will be used to target relevant parties (for example @whywedoresearch, @CAPHR) ***Strategy 3:*** Should strategy 1 and 2 fail to provide an adequate sample, invitations will also be sent to personal contacts of the research team across the UK	In addition to establishing suitability, information gained from the screening questionnaire will enable purposeful selection of participants to achieve representation across the UK and disciplines, should the number of volunteers exceed 18 *Geographical spread* of representation across England, Wales Scotland, Northern Ireland The researcher will aim to ensure that each home nation is represented and within each home nation, a geographical spread to obtain experiences from a range of HEIs. *Discipline spread* Volunteers will be asked to indicate the professional discipline(s) with whom they engaged. The researcher will aim to ensure there is representation across nursing, midwifery and each of the therapy professions *Extent of engagement experience* In order to meet the objectives of the concept analysis, participants who are able to call upon a high level of experience are desirable. The screening questionnaire asks volunteers to indicate the number of studies in which they have engaged with frontline practitioners over the past 3 years and the stages of the research process in which they engaged. Should over recruitment occur, volunteers who have engaged with practitioners in more than one study and/or in multiple stages of the research process will be selected SPSS will be used to input the data obtained from the screening questionnaire. Coding data and using the functions within SPSS will enable selection of volunteers in consider of geography disciplines and experience *NB: That a higher number of HEIs from the population are based in England and that the number of nurses registered to practice within the UK is proportionally higher than the other disciplines under consideration may result in both being proportionally more represented than other home nations and disciplines. The sampling frame will not aim for equal representation but a spread to endeavour to obtain representation across all home countries and disciplines.*

Table A4: Recruitment Strategy Phase 1 Fieldwork (Frontline Practitioners)

Recruitment process	Sampling details
Target population: Frontline practitioners (nursing, midwifery or therapy) identified as having practical experience of engagement with academic researchers	**Inclusion criteria** Front line practitioners (nursing, midwifery, therapies) delivering care to service users in a health care context Identified by academic participants as having experience of engagement in a health-related research study completed within the past 3 years **Exclusion criteria** Engaged in a research study as a participant only
Strategy 1: Researchers who volunteer and are eligible to participate in the study will be asked to forward an invitation to participate to any nursing, midwifery or therapy practitioners with whom they have engaged with during a study in the past 3 years ***Strategy 2:*** Should strategy 1 fail to obtain the required number of participants, recruitment flyers will be circulated via the social media accounts of a range of organisations related to both research and practice from the disciplines concerned Research interest: CAPHR, @whywedoresearch, @OTalk, @Physiotalk, Professional bodies: RCOT, RCN, RCM, CSP, RCSLT Advertisements will also be placed in professional publications aimed at each discipline to ensure reach to practitioners who do have access social media accounts	**Purposeful sampling technique** Number of focus groups: 3 Target sample size 12 Triangulation Group Number of focus groups: 2 Target sample size 10 *Focus group 1: nurses *Focus group 2: midwives *Focus group 3: therapists * analysis by individual disciplines is not indicated in the study protocol but attempts will be made to group participants in this manner to allow for uni-discipline discussion and data analysis. Therefore, this spread and representation of professions is a target and may not be achievable depending on recruitment success.

Strategy 3 Snowballing sampling will be used by asking those who volunteer to forward study information on to colleagues within their networks who they believe may meet the study criteria	

Appendix 5: Invitation to take part in Phase 1 Fieldwork

(Academic Researchers)

Dear *(insert name)*,

As an experienced member of the health care research community, we would like to offer you and your colleagues the opportunity to take part in a national study which seeks to analyse the concept 'Researcher Practitioner Engagement' in healthcare research.

We have carried out a theoretical analysis of this concept and are now seeking academic researchers from a range of Higher Education Institutions who are experienced in engaging with frontline practitioners in the design, conduct, dissemination or implementation of studies to use their experience to validate the concept analysis and tentative definition. We are interested to hear from researchers who have engaged with practitioners from nursing, midwifery, occupational therapy, physiotherapy or speech and language disciplines.

Participation will involve taking part in an online focus group with other experienced researchers from across the United Kingdom.

If you have the relevant experience and would like to contribute to this study, we would ask you to complete this brief screening questionnaire to register your interest and confirm your eligibility to take part. A Participant Information Sheet (PIS) is included within the questionnaire which gives further details on the purpose of the study, what involvement entails and assurances around the confidentiality and anonymity of any information you provide.

We would greatly appreciate if you could cascade this invitation to any colleagues within your faculty or research centre who you believe may have the experience required to participate in this study.

Further information can be obtained from the Principal Investigator (Daniels-n@ulster.ac.uk).

We look forward to hearing from you,

Nikki Daniels *(Principal Investigator)*
Dr. Patricia Gillen *(PhD Supervisor)*
Dr. Karen Casson *(PhD Supervisor)*

Ulster University
Doctoral College

Appendix 6: Invitation to take part in Phase 1 Fieldwork (Practitioners)

Ulster
University

Are you a frontline practitioner who has been engaged by an academic researcher in a research project?

We are seeking nurses, midwives, occupational therapists, physiotherapists, and speech and language therapists who have experience of being engaged by an academic in a research project in a role other than as a study participant.

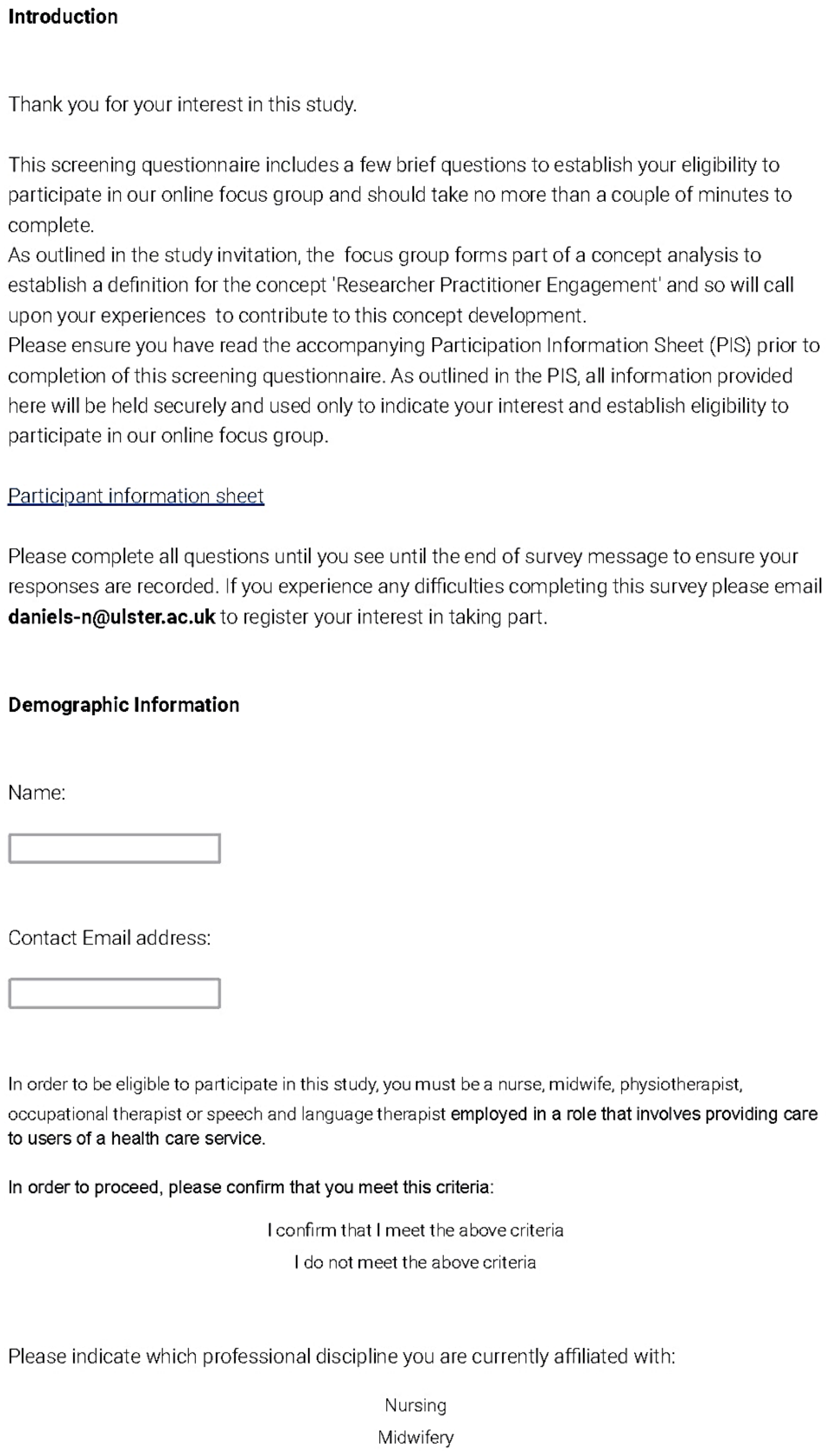
We would like to talk with you about your role in the research so we can better understand the concept of 'Researcher Practitioner Engagement'.

If you are a UK based frontline practitioner and have experience of being engaged in at least one study in the past three years, please follow this link for further information and to register your interest: bit.ly/ResearchPractice

If you have any queries, please contact:
Nikki Daniels daniels-n@ulster.ac.uk
PhD Researcher

ulster.ac.uk

Appendix 7: Phase 1 Recruitment Survey (Practitioners)



Introduction

Thank you for your interest in this study.

This screening questionnaire includes a few brief questions to establish your eligibility to participate in our online focus group and should take no more than a couple of minutes to complete.
As outlined in the study invitation, the focus group forms part of a concept analysis to establish a definition for the concept 'Researcher Practitioner Engagement' and so will call upon your experiences to contribute to this concept development.
Please ensure you have read the accompanying Participation Information Sheet (PIS) prior to completion of this screening questionnaire. As outlined in the PIS, all information provided here will be held securely and used only to indicate your interest and establish eligibility to participate in our online focus group.

Participant information sheet

Please complete all questions until you see until the end of survey message to ensure your responses are recorded. If you experience any difficulties completing this survey please email **daniels-n@ulster.ac.uk** to register your interest in taking part.

Demographic Information

Name:

Contact Email address:

In order to be eligible to participate in this study, you must be a nurse, midwife, physiotherapist, occupational therapist or speech and language therapist employed in a role that involves providing care to users of a health care service.

In order to proceed, please confirm that you meet this criteria:

I confirm that I meet the above criteria
I do not meet the above criteria

Please indicate which professional discipline you are currently affiliated with:

Nursing
Midwifery

Occupational therapy
Physiotherapy
Speech and language therapy

Engagement Information

In this section we would like to know about your experiences of engaging with an academic researcher as part of a study. By 'engaged' we mean that you have been involved in activities relating to the design, conduct, dissemination and/or implementation of a research study in a role other than as a study participant. So, for example, this could include writing a research protocol, recruiting participants, collecting data.

By 'academic researcher' we mean a researcher who is employed by a Higher Education Institution.

In the past three years, have you been been engaged by an academic researcher to support any elements of the design, conduct, dissemination or implementation of a study, other than as a study participant?

Yes, I have engaged with an academic researcher in at least one study
No, I have not engaged with an academic researcher during a study

Please indicate below the number of research studies in which you have engaged with an academic researcher in the past three years:

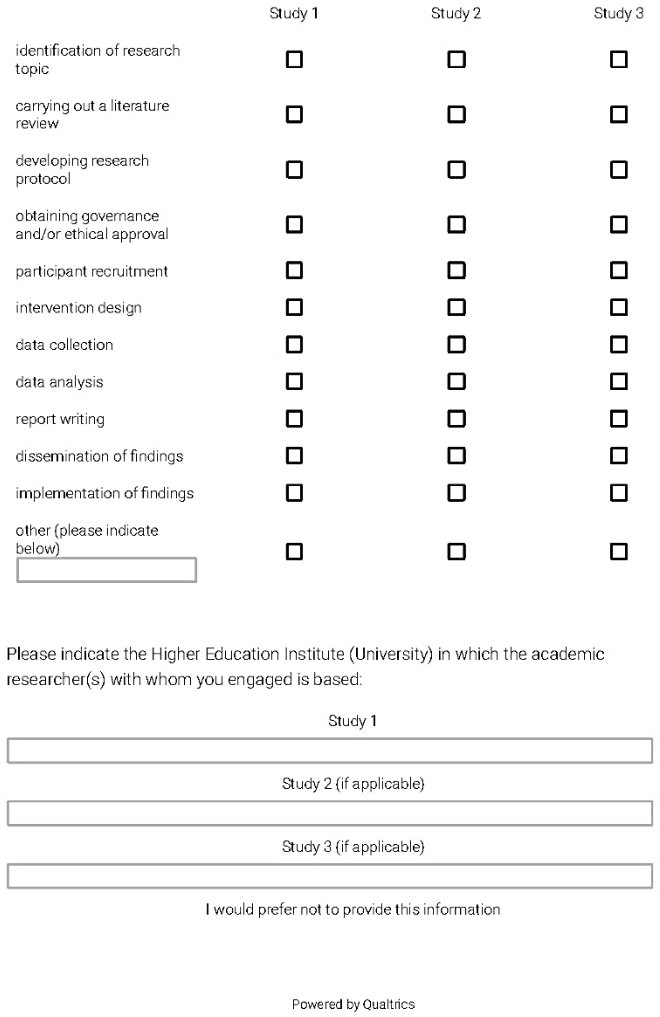
1
2
3
more than 3

Please indicate how this engagement was initiated:
(if you have engaged in more than 3 studies, please provide information relating to the most recent 3)

	Study 1	Study 2	Study 3
The academic researcher approached me to engage me in their study	☐	☐	☐
I approached the academic researcher to support a study initiated in my practice	☐	☐	☐

Please indicate the stage(s) of the research process in which you were engaged with or by an academic researcher in these studies:

	Study 1	Study 2	Study 3



	Study 1	Study 2	Study 3
identification of research topic	☐	☐	☐
carrying out a literature review	☐	☐	☐
developing research protocol	☐	☐	☐
obtaining governance and/or ethical approval	☐	☐	☐
participant recruitment	☐	☐	☐
intervention design	☐	☐	☐
data collection	☐	☐	☐
data analysis	☐	☐	☐
report writing	☐	☐	☐
dissemination of findings	☐	☐	☐
implementation of findings	☐	☐	☐
other (please indicate below)	☐	☐	☐

Please indicate the Higher Education Institute (University) in which the academic researcher(s) with whom you engaged is based:

Study 1

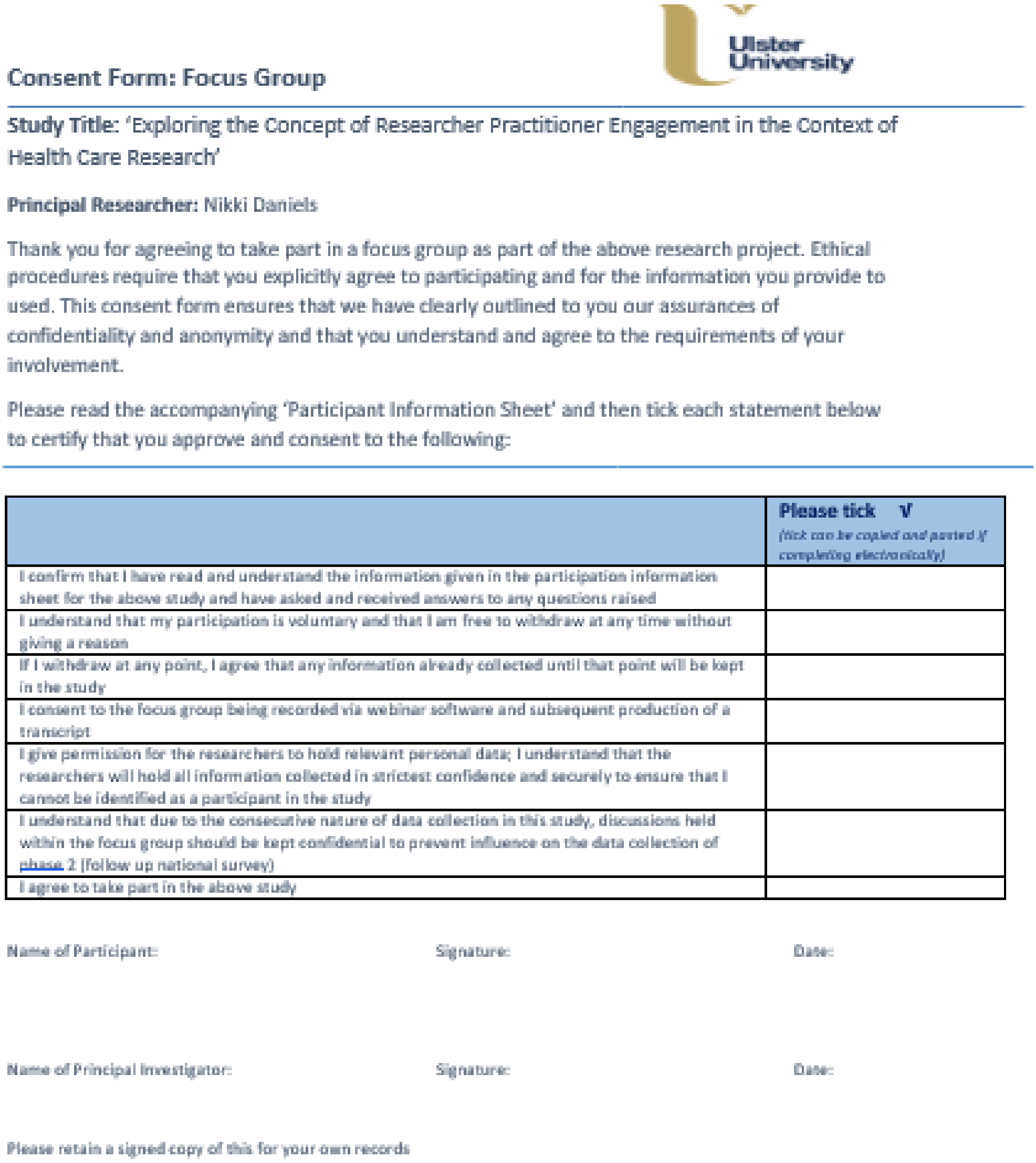
Study 2 (if applicable)

Study 3 (if applicable)

I would prefer not to provide this information

Powered by Qualtrics

Appendix 8: Informed Consent (Phase 1 Fieldwork)



Ulster University

Consent Form: Focus Group

Study Title: 'Exploring the Concept of Researcher Practitioner Engagement in the Context of Health Care Research'

Principal Researcher: Nikki Daniels

Thank you for agreeing to take part in a focus group as part of the above research project. Ethical procedures require that you explicitly agree to participating and for the information you provide to used. This consent form ensures that we have clearly outlined to you our assurances of confidentiality and anonymity and that you understand and agree to the requirements of your involvement.

Please read the accompanying 'Participant Information Sheet' and then tick each statement below to certify that you approve and consent to the following:

	Please tick √ *(tick can be copied and pasted if completing electronically)*
I confirm that I have read and understand the information given in the participation information sheet for the above study and have asked and received answers to any questions raised	
I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason	
If I withdraw at any point, I agree that any information already collected until that point will be kept in the study	
I consent to the focus group being recorded via webinar software and subsequent production of a transcript	
I give permission for the researchers to hold relevant personal data; I understand that the researchers will hold all information collected in strictest confidence and securely to ensure that I cannot be identified as a participant in the study	
I understand that due to the consecutive nature of data collection in this study, discussions held within the focus group should be kept confidential to prevent influence on the data collection of phase 2 (follow up national survey)	
I agree to take part in the above study	

Name of Participant: Signature: Date:

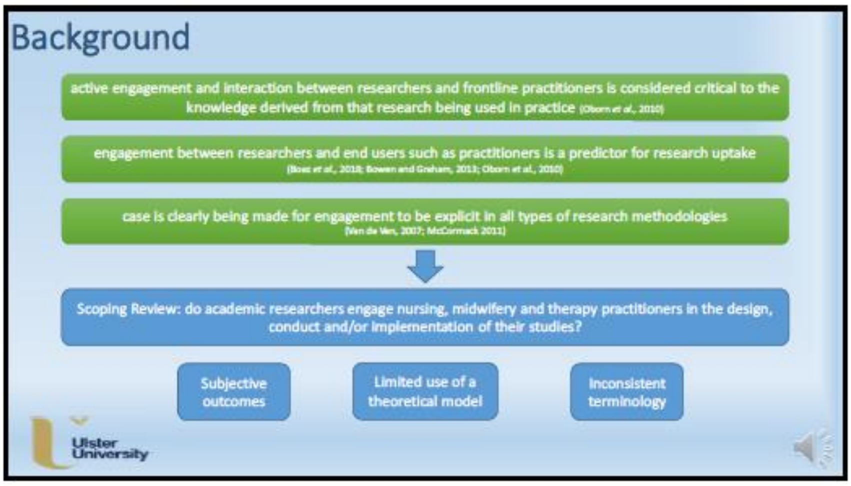
Name of Principal Investigator: Signature: Date:

Please retain a signed copy of this for your own records

Appendix 9: Presentation given at the beginning of all focus groups

This appendix details the slides presented at the beginning of all focus groups in Phase 1 fieldwork. Pre-recorded audio is included on slides 1 and 2

Slides which detail the outcome of the theoretical phase were omitted for Focus Group R5 (Triangulation Group)



Background

active engagement and interaction between researchers and frontline practitioners is considered critical to the knowledge derived from that research being used in practice (Oborn et al., 2010)

engagement between researchers and end users such as practitioners is a predictor for research uptake (Boaz et al., 2018; Bowen and Graham, 2013; Oborn et al., 2010)

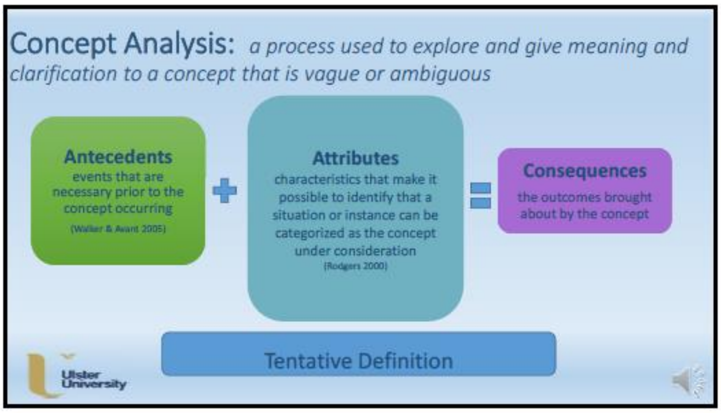
case is clearly being made for engagement to be explicit in all types of research methodologies (Van de Ven, 2007; McCormack 2011)

Scoping Review: do academic researchers engage nursing, midwifery and therapy practitioners in the design, conduct and/or implementation of their studies?

Subjective outcomes

Limited use of a theoretical model

Inconsistent terminology



Concept Analysis: *a process used to explore and give meaning and clarification to a concept that is vague or ambiguous*

Antecedents events that are necessary prior to the concept occurring (Walker & Avant 2005)

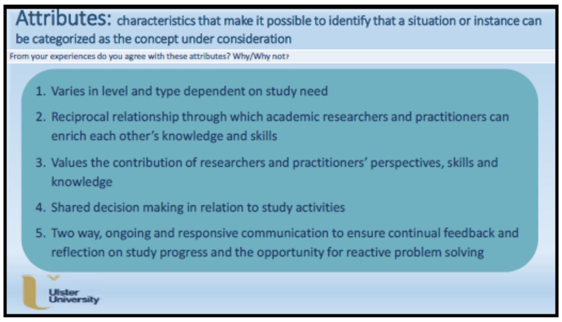
+

Attributes characteristics that make it possible to identify that a situation or instance can be categorized as the concept under consideration (Rodgers 2000)

=

Consequences the outcomes brought about by the concept

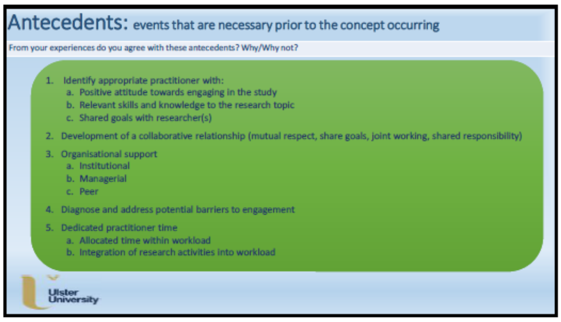
Tentative Definition



Attributes: characteristics that make it possible to identify that a situation or instance can be categorized as the concept under consideration

From your experiences do you agree with these attributes? Why/Why not?

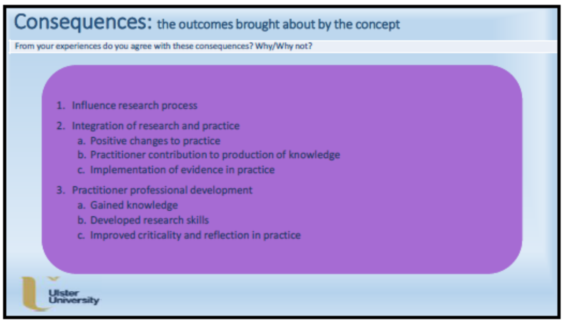
1. Varies in level and type dependent on study need
2. Reciprocal relationship through which academic researchers and practitioners can enrich each other's knowledge and skills
3. Values the contribution of researchers and practitioners' perspectives, skills and knowledge
4. Shared decision making in relation to study activities
5. Two way, ongoing and responsive communication to ensure continual feedback and reflection on study progress and the opportunity for reactive problem solving



Antecedents: events that are necessary prior to the concept occurring

From your experiences do you agree with these antecedents? Why/Why not?

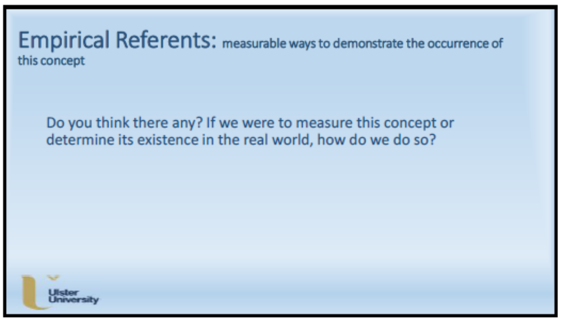
1. Identify appropriate practitioner with:
    a. Positive attitude towards engaging in the study
    b. Relevant skills and knowledge to the research topic
    c. Shared goals with researcher(s)
2. Development of a collaborative relationship (mutual respect, share goals, joint working, shared responsibility)
3. Organisational support
    a. Institutional
    b. Managerial
    c. Peer
4. Diagnose and address potential barriers to engagement
5. Dedicated practitioner time
    a. Allocated time within workload
    b. Integration of research activities into workload



Consequences: the outcomes brought about by the concept

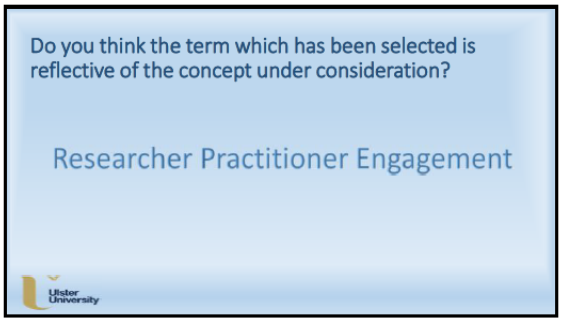
From your experiences do you agree with these consequences? Why/Why not?

1. Influence research process
2. Integration of research and practice
    a. Positive changes to practice
    b. Practitioner contribution to production of knowledge
    c. Implementation of evidence in practice
3. Practitioner professional development
    a. Gained knowledge
    b. Developed research skills
    c. Improved criticality and reflection in practice



Empirical Referents: measurable ways to demonstrate the occurrence of this concept

Do you think there any? If we were to measure this concept or determine its existence in the real world, how do we do so?



Do you think the term which has been selected is reflective of the concept under consideration?

Researcher Practitioner Engagement

Appendix 10: Focus group schedule (Phase 1 Fieldwork)

Table A5: Focus Group Schedule Phase 1 Fieldwork (Focus Groups R1-4 and P1-3)

Theoretical Phase	**Fieldwork Phase**
Questions applied to the literature	**Questions for Focus Group**
Question 1: Defining attributes of ‘Researcher Practitioner Engagement’	
What are the reported requirements for successful engagement of frontline practitioners by academic researchers in the research process? ***From your experiences, do you agree with these attributes?*** ***Why/why not?*** ***Any omissions?***	An analysis of the literature suggests that the attributes of RPE are: 1. Varies in level and type dependent on study need 2. Reciprocal relationship through which academic researchers and practitioners can enrich each other’s knowledge and skills 3. Values the contribution of researchers and practitioners’ perspectives, skills and knowledge 4. Shared decision making in relation to study activities 5. Two way, ongoing and responsive communication to ensure continual feedback and reflection on study progress and the opportunity for reactive problem solving

Table A5: Continued

Theoretical Phase	Fieldwork Phase
Question 2: Antecedents of 'Researcher Practitioner Engagement'	
What are the reported requirements for successful engagement of frontline practitioners by academic researchers in the research process? ***From your experiences, do you agree with these antecedents?*** ***Why/Why not?*** ***Any omissions?***	An analysis of the literature suggests that the antecedents of RPE are: 1. Identify appropriate practitioner with: Positive attitude towards engaging in the study Relevant skills and knowledge to the research topic Shared goals with researcher(s) 2. Development of a collaborative relationship (mutual respect, share goals, joint working, shared responsibility) 3. Organisational support Institutional Managerial Peer 4. Diagnose and address potential barriers to engagement 5. Dedicated practitioner time Allocated time within workload Integration of research activities into workload
Question 3: Consequences of 'Researcher Practitioner Engagement'	
What are the reported benefits and outcomes of engagement of frontline practitioners by academic researchers in the research process? ***From your experiences, do you agree with these consequences? Why/Why not?*** ***Any omissions?***	An analysis of the literature suggests that the consequences of RPE are: 1. Influence research process 2. Integration of research and practice Positive changes to practice Practitioner contribution to production of knowledge Implementation of evidence in practice 3. Practitioner professional development Gained knowledge Developed research skills Improved criticality and reflection in practice
Question 4: Empirical referents	
	Do you think there any measurable ways to demonstrate the occurrence of this concept? If we were to measure this concept or determine its existence in the real world, how do we do so?
Question 5: Necessity of the concept	
	Do you think the concept of Researcher Practitioner Engagement is necessary?
Question 6: Term 'Researcher Practitioner Engagement'	
	Do you think the term which has been selected is reflective of the concept under consideration?'

Appendix 11: Member Checking Examples

Focus Group R2 (Academic Researchers)

***Aim*:** This focus group formed the fieldwork phase (phase 2) of a concept analysis through which the concept of 'Researcher Practitioner Engagement' is being developed. Participants were sent a summary of the outcome of the theoretical phase (phase 1): the attributes, antecedents, consequences of 'Researcher Practitioner Engagement'. During the focus group, participants used their experiences of engaging with frontline practitioners during the research process to explore the validity of each of the attributes, antecedents and consequences, their views on the necessity of the concept and opinions on the chosen term.

Overview: The focus group was conducted online using audio-visual technology. Four participants engaged using microphones and cameras. Three participants (P1, P2 & P3) joined the discussion from the beginning and P4 joined after 30 minutes during discussion of attribute 4. P1 left the group at 1 hour 10 minutes after discussion on consequence 1; P2 left at 1 hour 15 minutes after discussing consequences. P3 and P4 continued discussions until the end of the group to discuss the necessity of the concept and the term selected.

The focus group lasted 1 hour 33 minutes in total.

Summary of Participants' Views

Attributes	
Varies in level and type, dependent on study need	Depends what the study is and what engagement is required
A reciprocal relationship through which both the researchers and the practitioners can enrich each other's skills and knowledge	Some agreement; becoming increasingly challenging as practitioners are time restricted; mutual benefit is questionable Practitioners need to be part of the process to overcome seeing research as an additional task; relationships will vary depending on the context and how they have developed
Values the contribution of researchers and practitioners' perspectives, skills and knowledge	All in agreement
Shared decision making	General disagreement; researchers and practitioners negotiate as opposed to make shared decisions; different weighting placed on decision making depending on the activity and who is best skilled/expert to make that decision Required at practitioner level (as opposed to managerial level or higher) to facilitate buy-in
To ensure continual feedback and reflection on study progress and the opportunity for reactive problem solving	This is an ideal but is challenged by practitioners' workload and time constraints; researchers take the lead on this, take charge of making this happen as it is the researcher's priority (and not the practitioner's)
Antecedents	
Practitioners that have a) positive attitude towards engaging in the study, b) relevant skills and knowledge in relation to the topic and c) shared goals with the researchers	Agreement in relation to attitude; attitude of practitioners demonstrated through their actions Engagement is positively influenced when a practitioner has a positive attitude towards the patient benefit of a study therefore a shared understanding as opposed to a shared goal
Development of a collaborative relationship	There are sharing of responsibilities, but someone must take a lead role/responsibility Requires researchers to inspire and motivate practitioners Collaboration is an underpinning principle that needs to be

	developed and attended to throughout to build relationships Can also be a consequence of 'Researcher Practitioner Engagement'
Organisational Support, institutional (Practitioner), managerial and peer	Agreement that support is required Support of manager facilitates engagement with practitioners Negotiation with peers required by practitioners Research as a core value and activity within the practitioner's institution facilitates engagement
Diagnosing and addressing potential barriers to engagement	Agreement to some extent; timely diagnosis of potential problems required Ongoing process therefore not an antecedent
Dedicated practitioner time	Some agreement however feasibility is questionable; time implications in securing this prior to the engagement therefore a challenging antecedent. Challenges of obtaining backfill Expectations of practitioners and intended outcomes need to be outlined if dedicated time to be made available
Consequences	
Influences the research process	Agreement It can also influence the clinical process
Integration of research and practice; a) positive changes to practice b) practitioner contribution to the production of knowledge c) implementation of evidence into practice	Agreement to some extent Consider removing 'positive' i.e. changes to practice (change may not necessarily be better but become a routine because of a study)
Practitioner professional development	Disagreement; they may pick up some elements but not research skills, criticality or reflection
Empirical Referents	
Measurable ways to demonstrate the concept has occurred	Measuring values and reciprocity is challenging Use of process measurement but this does not recognise the challenges to achieving engagement; interviewing would be required
Opinion on the term	
Researcher Practitioner Engagement	No issues identified
Necessity of concept	
	It is required conceptually Concerns about the concept becoming a professional version of PPI because of the potential pragmatic implications

What has been learnt from this focus group?

The challenges that practitioners face has been clearly outlined in this discussion and greatly influenced participants' views on the feasibility and necessity of some of the antecedents and attributes. Participants voiced the need to take a lead role as a study was their responsibility, again influencing opinion on elements of the concept. Some aspects are considered ongoing processes as opposed to antecedents. Participants had not witnessed some of the consequences presented. A need for a shared understanding of the value of the research for patient care and research as a core activity and value within the NHS are considered facilitators.

Focus Group P3 (Practitioners)

***Aim*:** This focus group formed the fieldwork phase (phase 2) of a concept analysis through which the concept of 'Researcher Practitioner Engagement' is being developed. Participants were sent a summary of the outcome of the theoretical phase (phase 1): the attributes, antecedents, consequences and a tentative definition of 'Researcher Practitioner Engagement'. During the focus group, participants used their experiences of engaging with academic researchers during the research process to explore the validity of each of the attributes, antecedents and consequences, their views on the necessity of the concept and opinions on the chosen term.

Overview: The focus group was conducted online using audio-visual technology. Three participants engaged, two using microphones and cameras and one using audio technology only. The focus group lasted 1 hour 10 minutes.

Summary of Participants' Views

Attributes	
Varies in level and type, dependent on study need	Agree: depends on the type of study
A reciprocal relationship through which both the researchers and the practitioners can enrich each other's skills and knowledge	Agree: theoretically this is a requirement. Reciprocity can relate to time and sharing of knowledge. Relationships need to be mutually respectful and are required to ensure practitioners are not just meeting a function such as recruitment. Practicalities such as time and competing priorities can challenge a reciprocal relationship.
Values the contribution of researchers and practitioners' perspectives, skills and knowledge	Agree: a practitioner needs to feel valued and that their skills and knowledge are as valuable as the researchers. Being involved in the formative stages can be where practitioners feel most valued as their clinical knowledge can make a greater contribution to the research process.
Shared decision making	Agree: theoretically, decisions which relate to clinical aspects of the research design and process should have both practitioner and researcher input. From experiences, it can feel like researchers' decisions dominate which can result in decisions which provide methodological purity, but which are not clinically practical or achievable. If a practitioner is not engaged in the formative stages, it is challenging to see how they can be involved in shared decision making if the protocol is already established. Only minor changes can be made. Decisions should be taken by the party with the relevant knowledge to make that decision. Practitioners should be involved in decisions within the clinical context, for example scheduling. Having the ability to influence factors such as scheduling can increase engagement and buy in to a study.
Two-way ongoing and responsive communication to ensure continual feedback and reflection on study progress and the opportunity for reactive problem solving	Agree to some extent: communication needs to be relevant and not overload or overwhelm practitioners.

Antecedents	
Practitioners that have a) positive attitude towards engaging in the study b) relevant skills and knowledge in relation to the topic and c) shared goals with the researchers	Agree that practitioners should have a positive attitude, but it is important to maintain this throughout the process as this has the potential to wane. Practitioners need to have the right clinical skills and knowledge but not research skills as they can be acquired/develop. Researchers and practitioners may have shared goals but also different goals depending on their motivations.
Development of a collaborative relationship	Disagree: relationships develop over time. There is no time to establish this level of relationship before the study begins so it is a developing relationship, or a relationship established from previous engagement.
Organisational Support, institutional (Practitioner), managerial and peer	Agree: there needs to be a consistent embedded organisational culture where research is not seen as an 'add-on' which can then permeate down to managers and peers. If this is in place, then challenges such as time and resources can be addressed more readily.
Diagnosing and addressing potential barriers to engagement	Agree to some extent; common barriers (such as time and resources) can be predicted as they are already evidenced; solutions to these should be identified in advance to prevent barriers arising. Other barriers cannot be diagnosed and so should be addressed as they arise.
Dedicated practitioner time	Agree: engaging in research is seen as additional workload, thereby integrating research in to clinical workload generally will reflect that it is equally valid and meaningful and perhaps increase capacity. Workload integration in relation to a specific study can be challenging if the intervention is new and not part of existing practice. Although funding may be available for back-pay, this often is impractical in the clinical context.
Consequences	
Influences the research process	Agree that this can be a consequence if practitioners have contributed to the study protocol. Engagement in recruitment and data collection is less likely to influence the research process.
Integration of research and practice; a) positive changes to practice b) practitioner contribution to the production of knowledge c) implementation of evidence into practice	Agreement to some extent. Some instantaneous changes to local practice may occur. Has the potential to influence practice, if practitioners are involved at early stages then research might feel more relevant to practice and more likely to produce relevant outcomes.
Practitioner professional development	Agree
Opinion on the term	
Researcher Practitioner Engagement	Consider changing to 'Practitioner Researcher Engagement'; adds more emphasis to the practitioner element.
Necessity of concept	
	Essential to develop a framework to acknowledge this activity and its importance, build capacity, improve existing practices.

What has been learnt from this focus group?

Throughout this discussion, participants acknowledged the ideals which should be in place for practitioner engagement, recognising the challenges experienced which can limit or prevent this process from resulting in favourable outcomes. A key message from this discussion across many of the attributes, antecedents and consequences was the importance of practitioner engagement in the formative stages of a study; valuing practitioner's perspective in a study protocol can allow for practicalities of the clinical context to be considered when planning study activities, thereby increase engagement whilst also making the study more likely to result in findings which are genuinely relevant to patients. Not only should practitioner's clinical perspective be valued, but there should be a shared value of this engagement by both researchers and practitioners. Integration of research into workloads, recognising it as valuable and not an additional activity, along with an embedded organisational culture of research could help address barriers that can impede engagement.

Participants recognised the potential positive influence of Researcher Practitioner Engagement on integration of research and practice, but these were considered more local and instantaneous at present. The need for this concept and a framework which recognises the importance of engagement, builds capacity for engagement and improves current practices was acknowledged. Re-labelling the concept Practitioner Researcher Engagement was considered a positive step to ensure emphasis is placed on the value of the practitioner role and remove the dominance of the researcher role.

Focus Group R5 (Triangulation group)

***Aim*:** This focus group formed part of the fieldwork stage (stage 2) of a concept analysis through which the concept of 'Researcher Practitioner Engagement' is being developed. During the focus group, participants used their experiences of engaging with frontline practitioners during the research process to explore what they believed to be the attributes, antecedents and consequences of the concept of 'Researcher Practitioner Engagement', views on the necessity of this concept and opinions on the chosen term.

Overview: The focus group was conducted online using audio-visual technology. Four participants engaged using microphones and cameras. One member of the research team facilitated the group whilst a second member of the research team observed, took notes and was available for technical support. The focus group lasted 59 minutes.

Summary of Participants' Views

Attributes	
Values the contribution of researchers and practitioners' perspectives, skills and knowledge to the research process	Each has their role, and each are very valuable in their own role Recognition of skill sets and awareness of skill gaps Clinicians who have an interest in what research can add to their practice ad researchers who recognise the value of what clinicians bring to answer a research-based question researchers don't have the coal face insight of practitioners
Addresses a shared research goal	Both parties committed to exploring topic for different reasons Shared understanding about a common goal Vested interest in the research outcomes
Shared process	Sharing of power A process of co-production You feel like a partnership Work along with them Soliciting agreement throughout
Begins at the formative stages of a study	Co-working the protocol with practitioners Working with practitioners to keep the research question relevant If practitioner s there from the very beginning they are more likely to use the findings in practice
Open dialogue	Communication to address small issues that are fundamental to the project Important to keep the project going and motivating people,

Antecedents	
Appreciation of the challenges of the clinical environment	Respecting clinician's time Know the challenges practitioners might face on a day-to-day basis Not to make it burdensome for them About being in clinics and really understanding what happens Make what is required part of the work they already do, rather than giving them a lot of extra work to do
Consequences	
Increases robustness, relevance and transferability of outcomes	More likely to follow up on any recommendations research is stronger Shapes the methodology End up with something that has real significance for clinical practice Easier to transfer back into clinical practice, The answer to the question that they're asking, is answered in a much more robust way
Practitioner professional development	Clinicians were placed as first author, present at conferences Can speak to revalidation processes
Integration of research and practice	Practitioners see how research works in practice and how this fits with being an evidence-based practitioner
Researcher development	Better understanding about clinical environments and clinical contexts informs research
Ongoing relationship	Relationships for life sense of growing of a community, of a bridging between the two institutions
Empirical Referents	
Dissemination and outputs	Publications, abstracts, conferences Information (from the study outcomes) was delivered by them (users) and I think that validated the resource
Impact	Demonstrate the impact of working together, through maybe case studies
Opinion on the term	
	Engagement maybe sounds like people just dipping in and out, but actually there being something stronger about a partnership Is it more than just co-working, or collaboration, if it's an ongoing relationship? I think the word engagement works as it shows that they're engaging with each other
Necessity of concept	
	Helps to define and defend what you're doing Offers legitimacy Recognition of its importance within a project. It would help, especially maybe new researchers Recognises it as an integral part of the research – not just assumed Helps to understand what it is and what is needed to make it work

What has been learnt from this focus group?

From the participants' perspectives and experiences, there was an overall sense of the value placed on practitioner engagement for a study to be feasible, collect clinically relevant data and for findings to be transferable to practice. There was a clear consensus that the concept of Researcher Practitioner Engagement is required to ensure value is recognised, impact demonstrated, and a supportive culture developed. The opinions of all four participants on the attributes, antecedents and consequences of Researcher Practitioner Engagement were consistent; this was evident from recurring themes, as illustrated by examples provided in the table, and non-verbal agreement noted throughout the discussion.

There was a recurring theme that it was necessary for researchers to understand the challenges that practitioners face in the clinical environment for engagement to be successful and for researchers to adopt strategies to overcome these. Participants spoke of the importance of building a relationship from the early stages of the process and continuing to develop these relationships as a study progressed. Participants also felt that there should be a shared understanding between researchers and practitioners and that the process should be shared, with terms like 'co-production' and 'co-working' used to reflect this.

The term 'partnership' was considered perhaps more reflective of the nature of this concept if considering a long term and ongoing gains, but engagement also reflects the essence of the process.

Appendix 12: Reflexivity and Reflections

Overview of the researcher and their background

I qualified as an occupational therapist in 1997 and worked in hospital and community based clinical roles within the National Health service (NHS) until taking up a research post in 2003. In this role as a research therapist, I was the Principal Investigator for a study funded by the Medicines and Healthcare Regulatory Agency (MHRA), jointly hosted within a NHS Trust and university in England. The aim of the study was to investigate the features of standing frames for children aged 8 to 14 who required this equipment as part of a postural management programme. The study involved engaging standing frame manufacturers and working alongside schools and community therapy teams to enable children, their caregivers, teachers and therapists to evaluate a range of different frames at home and in the school environment.

After completion of this project, and prior to undertaking this PhD, I worked as a Lecturer in Occupational Therapy at a second UK university for over ten years, predominately in a teaching role. For the latter five years, the majority of my workload was dedicated to supporting post registration learners from a range of healthcare disciplines to advance their practice through postgraduate study, leading a master's programme and teaching across a number of post registration modules, including research and dissertation.

It is at this stage of my career, I have chosen to pursue a PhD to advance my skills and knowledge as an academic researcher within the healthcare arena. This study was therefore conducted as part of a PhD programme within a School of Nursing, based in a university in the UK. Of note, this is neither of the universities in which I have been employed previously, and so is the third UK based university in which I have had a professional role, outside of my pre-registration training. The supervisory team is made up of a primary researcher who has a dual role, across this university and as a research and development lead for nursing, midwifery and allied health professionals within a local NHS trust. The second supervisor is employed full time as a lecturer within the university with experience as an active researcher and in supporting healthcare practitioners in advancing their practice through master's level study.

Also, of note, for the past four years and so throughout this programme of study, I have been a founding member of a twitter chat (#OTalk Research), a monthly discussion hosted on this social media platform which brings together members of the occupational therapy community to discuss research related issues. In this role, I have had contact with researchers from within the occupational therapy profession in supporting them to host Twitter chats and also developed a social media profile, by both following a community of researchers and being followed by researchers, due to my membership of this Twitter team.

Positionality statement

My professional experiences span clinical, research and academic teaching roles from employment in both academic institutions and organisations which provide clinical services. From these experiences, I understand what it is like to lead a research project in a health environment. I have experience of being a researcher who has engaged a practitioner from clinical practice in the conduct of a study. I also have experience of being in a clinical role and all that entails, but do not have experience of being engaged as a practitioner by an academic researcher. From supervising a number of masters level students during their studies, and in particular their dissertation modules, I have an understanding from their perspectives, of the growing challenges of both engaging with research alongside the demands of a clinical role, and the antipathy that many have towards research generally. I have developed an understanding of the research culture in the UK healthcare system through organising, hosting and taking part in regular Twitter chats with clinicians and researchers around a range of research issues relevant to the profession of occupational therapy.

Locating myself in relation to the topic

During my role as a research therapist (2003-2005), I had experience of engaging with various stakeholders during the conduct of this study, and specifically with a number of therapists who supported this research in various ways. At the time, I was very cognisant of the benefits of this process for one of the practitioners in particular, which led me to write a CPD article for a publication (Daniels and Gopsill, Therapy Weekly, 2005). This article focussed specifically on the professional development opportunity that being seconded part time from a clinical role to work alongside myself as a full-time researcher had afforded this individual physiotherapist and her clinical team. So, although this was not directly aligned with the specific context of this PhD study, there are some cross overs. The driver for this CPD article was the positive benefits I had observed specifically for the physiotherapist's professional development, in relation to research related skills.

Therefore, it is important to acknowledge that I came to this study with a view that engaging practitioners in research can be a positive process for aspects of their professional development. However, when I reflected on this in the early part of designing this PhD study, I noted that the consideration that was given to this experience came predominately from the practitioner's viewpoint, was specific to their professional development, and no consideration was explicitly given to the benefits to myself as the researcher or to the actual study. It has not been until now, with my newly developed knowledge from the process of carrying out this PhD study, that I can look back and see the additional benefits that were afforded.

There was an element of this prior experience which motivated me to carry out this PhD study, and has given me some insight into the experiences of a clinician engaged by a researcher. However, some time has passed since, and I do not believe this experience has in any way biased any interpretations made within this study.

Locating myself in relation to the participants

Being a PhD researcher based within a School of Nursing in a UK university, automatically places me and the supervisory team in the context in which this study is concerned, part of the social world which is central to this study and therefore, all considered ‘insiders’. To ensure reflexivity, evaluative consideration was given to if and how this position had influenced participants willingness to take part and their contributions within the focus group, facilitated by myself and PG.

Did knowledge of my background influence willingness to take part?

Academic Researcher Participants: In the early stages of Phase 1, I was concerned that I was a PhD researcher approaching Professors to ask them to take part in my study, or cascade the invitation to take part, and that my position as a PhD researcher might be disadvantageous. Of course, not all were Professors, but represented a range of roles within the academic field, including lecturers, readers, research fellows and a PhD researcher. Therefore, I viewed some as peers. However, most participants may only have been aware of my PhD researcher status, and unaware of my additional experience in an academic role. This was not communicated to participants.

My understanding of the nature of academic workloads played a key part in identifying a way to gather the data for this study in a robust manner but minimising the burden on participants, to encourage them to volunteer to take part. I did not want potential participants to be undeterred by a time commitment, for what I thought they might perceive as 'just a PhD study'. I can't know if my position as a PhD researcher, or the study being perceived as a PhD study, was of any deterrent, however, the positive response to the study invitation within the first few days of its distribution, suggested that this was perhaps not the case, with many completing the recruitment survey and others sending polite and supportive responses to apologise when they were either not available or did not meet the study criteria.

The study's recruitment strategy was staged, with the first step to recruiting researchers using a targeted email to as many leads within nursing, midwifery and therapy research in UK Universities as could be located on the websites of all Council of Deans of Health members. All on the list, regardless if they were known to the research team, were treated equally, with standardisation in communications. However, it has to be acknowledged that some who received the email invitation may have been familiar with my name from previous contacts within the occupational community or through my social media profile. Similarly, some may have been familiar with a member of the supervisory team, whose names were included at the end of the email. I am confident that a consistent approach was used, with each recipient of the invitation email approached in the same manner to ensure fair dealing and therefore no introduction of bias during this stage which could have been introduced had any personal contacts of the research team been approached to take part in an a manner that differed from other participants. Although I may be aware of the names of some key researchers within the occupational therapy field, I adopted the same approach to searching each of the university websites to locate research leads, and so did not search for individuals specifically, or include names on the list purely derived from personal contacts.

The potential for any influence underpinned the decision to employ this standardised approach. However, now knowing the profile of the study participants, it is important that this standardised approach was adopted is reinforced. One of the researchers who took part in the second focus group was known to me from my involvement in a research support network during my time as a research therapist. One researcher who took part in the first focus group was an employee of my host university, whom I had met on just one occasion, but could be described as a colleague of the PhD supervisors. Although this gave some level of familiarisation between me and this focus group member at the beginning of the focus group, it did not have any further influence on the way the data were collected. In more than one focus group, researchers were also familiar with each other and this too appeared to pose no threat or influence the conduct of the focus groups in any way.

In the triangulation group, I was responsible for all organisation, and PG facilitated this group as a further strategy to prevent any elements of the outcome of the theoretical phase influencing the interactions in this group. Although it transpired that one participant, from a different university, was known to PG in a professional capacity, she had not been made aware of the participants names prior to the focus group commencing. As an observer of this group, I noted no influences caused by this prior relationship.

Practitioners: This population was perhaps a different concern to the researchers. Recruitment of participants was a much greater challenge and had to be approached differently because ethical approval was not in place to approach practitioners via their NHS employee. Step one of the recruitment strategy included asking researchers to cascade the invitation to take part to practitioners with whom they had engaged. It is not known whether researchers actioned this, and one researcher did indicate to me that she was uncomfortable doing so. In tandem, an advertisement was placed via Twitter. One occupational therapist did volunteer who was known to me through her role as a placement educator and my role as a visiting tutor to pre-registration students whilst working as an occupational therapy lecturer. However, I have not had contact with this therapist for some years but acknowledge that her familiarity with me may have encouraged her to volunteer to take part. Her experience was relevant to the study and throughout the focus group, I perceived no influence or difference in communications between myself and this participant and the other two therapists who took part.

When recruitment of practitioner participants continued to be a challenge, the research team moved to the final step within the recruitment strategy, which was to approach personal contacts whom we were aware had the relevant experience or could circulate invitations within their professional networks. I approached a colleague with a high profile in relation to research, I was hopeful she would be able to identify those with appropriate experience to take part. She herself completed the recruitment survey and took part in one focus group.

Did knowledge of my background influence what was said within the focus groups?

Overall, I did not perceive that participant's understanding of my role or background influenced what was said within any of the focus groups, therefore had no bearing on the data collected, other than an overall sense of support and encouragement in taking this study forward.

Did my position affect the interpretation of the data?

I strongly believe that my insider role has been very advantageous to this study, in providing me with a good understanding of health research generally, but also the different worlds of clinical and academic roles, and the two very different contexts in which these roles are carried out. This understanding helped to clarify the need for this study in the first instance, but helped to inform elements of the study design, for example, how to access participants, challenges that might impact on their engagement with the study, or indeed factors that could facilitate their engagement. During analysis of Phase 1 data, I could recognise what I hadn't understood to be relevant or hadn't been aware of from different settings so building my understanding of the study context. The use of the theoretical framework really helped to ensure I could keep everything focussed around this and so afforded transparency in my analysis and reduced any bias on my part.

Example from reflective diary

I was initially very conscious of my position as a PhD researcher, and that the majority of those who had volunteered to take part were in professorial roles. This in many ways, perhaps enhanced the study, as it fuelled my need to ensure all areas were very considered and many quality checks carried out. This anxiety was coupled, in part by imposter syndrome and my confidence in my ability to facilitate a focus group, but mainly by the novel approach being taken to the focus group, through the presentation of the findings of a previous phase of this element of the study. I was aware that this was perhaps a different approach than had perhaps been previously experienced by most. This felt like exposure of my research skills, as this was the outcome of an interpretive phase, which I felt could be challenged, but I was reassured by the support of supervisors, who had reviewed this work and had been involved in the analytical process. The key here was to reconcile that I was calling on the experience of these participants because of their level of experience, and therefore their ability to offer independent analysis of the theoretical findings. Their scrutiny would be of the data and not of the process that I had used to derive that data or of my skills as a focus group facilitator.

In effect, the process of revealing the theoretical stage findings to these researchers could be considered a process of independent scrutiny; there was an element of interrogation of my interpretation of the instances when there was examples of some questioning from participants and so justification on my part for why elements had been included or categorised in a particular way. This was in no way challenging of decisions made, but certainly discursive and reflective on their part based on their experiences and helped to unpick aspects of the findings of the theoretical phase to really identify the salient elements of a concept component. But doing so, perhaps called on me to contribute slightly more or play a slightly different role than what would be considered a traditional facilitator role within a focus group. This felt uneasy following the first focus group and caused me to give a lot of consideration to my role and the contribution I had made to the discussion in the first focus group before the next focus group took place. This involved listening back to the transcription several times to self-analyse my contribution. I recognised that in the first group I spoke too much. But, in light of the objectives of this fieldwork, I reasoned that what I was saying was congruent as clarity was required on elements of the theoretical phase, required expanding on the instances from the literature to provide understanding of the categorisation given; if this wasn't provided, then it in effect defeated the purpose of the fieldwork in really assessing the relevance of each, so part of my role was helping them to understand what it meant and to shape it to ensure it did represent what they understood to the salient concept concepts. I maintained the same approach so there was consistency across all groups but was very mindful of minimising my contribution and sitting back more following group R1.

Reflections on my philosophical position

I started this journey believing that perhaps critical realism was underpinning this study; in fact, my first thoughts were that the study design needed to follow a critical realist approach, in both how the literature review was approached, and any subsequent data collection. Doing so would help to identify what works for who and in what situations. I understood from my experiences, and from the literature, that there would be many truths, that each researcher and each practitioner experience would be very different, and that even within one study these experiences would be perceived differently from an academic and a clinical perspective. Although these different truths were very important to developing this concept, and all something I was very interested in, I had to focus on the very specific objective of developing the concept, distilling the key defining components that would be applicable to all these settings, regardless of these truths. That the objective was not to explore these experiences, but to use these experiences to confirm the relevant components of this concept. As discussed later, this needed revisiting and played a key element of my reflection on my facilitation skills.

However, I came to realise that it wasn't clear exactly what I was investigating. I was concerned that the phenomenon I was referring to would be perceived by others, in particular any study participants, as co-production, and so I needed to very clear and confident in the need for this study in the first place. This process led me to realise that it was in fact a more pragmatic approach that I was adopting to this study, and if I wanted this study to be useful, it first needed to address the issues that were clear from considering the literature, and in fact the issue that was preventing me from moving forward with the study design, that in fact, the word engagement was so broad, used in a very informal manner, with no real definition or meaning and used with a range terms, such as collaboration, that equally didn't appear to have been clearly defined. This realisation was a turning point in the study; understanding, and being able to demonstrate this through analysis of examples from the literature, gave me evidence, and confidence in the need for the study, and overcame my insecurities that others may challenge the need for this study by believing it was co-production, or that I was re-inventing the wheel. I now had evidence to call upon to justify my position, removing subjectivity. This was why the decision was taken to communicate this transparently and consistently to all Phase 1 participants via a pre-recorded PowerPoint presentation.

This pragmatic approach then dominated throughout the study, influencing the study design stage and allowing for amendments to be made throughout which would contribute to the rigour, for example the decision to include a triangulation focus group, not originally intended. In the design stages, understanding of both demands of clinical and academic roles, influenced decisions, minimising burden, taking part in just one focus group for example, as opposed to a more longitudinal approach such as Delphi technique, use of focus groups using audio-visual technology that would accommodate time and place to allow more flexibility to take part.

As the focus groups progressed, I became very aware of the potential for the ‘pink elephant’ paradox described by Speirs. That perhaps this concept just existed in my own mind, and I needed to be clear that it was a phenomenon which was real, that firstly, I was not leading participants to believe that this phenomenon existed (when really maybe it is co-production), or leading them to believe what the concept components are by presenting them with the outcome of the theoretical phase of the concept development (Phase 1). To me, the triangulation group was an essential element to add credibility to this study. The addition of the question ‘Is this a necessary concept’ was also important to ensure specific data were gathered which addressed this question directly as opposed to my interpretations. At no point, did any participant address the issue that I had felt insecure about, that actually, no, this is co-production. All provided assurance that this concept was new and required defining, and any reservations were connected to practicalities of operationalising such a concept as opposed to its necessity. The need to address the inner voice of ‘what concept components would they identify if I wasn’t exposing them to the outcome of the theoretical phase?’ would help to address what I was perceiving as the pink elephant paradox.

Peer debriefing

In perhaps an unconventional move, following focus group R1, one of the participants approached me to volunteer to offer her perspective of the focus group; she explained that this was based on both her desire as an academic researcher with a professional interest in focus groups and her first experience of taking part in a focus group in an online situation, to reflect with me on her perspective. This seemed to be motivated by her questioning if the group could be defined as a focus group, and so we had a robust and very fruitful discussion around the differences between a group interview and a focus group and if the online environment had any influence on the ability for participants to interact in the manner required to constitute a focus group.

This discussion prompted reflection on whether this was the case. I questioned why I had chosen a focus group as opposed to a group interview; critically evaluating the importance of the interaction between participants and why this method had been selected as opposed to a group interview. Was the online environments limiting the interaction in any way? An advantage of this data collection method was the ability to revisit the audio-visual recording to be able to critically examine my role as a facilitator and revisit the interactions. I conducted an exercise whereby I noted where participants had interacted with each other directly, verbally or non-verbally, so I could be confident that their interactions were forming the data. I could see however, why this researcher had perhaps perceived interaction to be limited in comparison to face to face groups, and a combination of both the online environment and the presentation of the very structured theoretical phase, also limited opportunities for interaction.

This academic discussion and her perspective as a participant on my role as a facilitator, combined with my own reflections, afforded reflexivity on how my facilitative skills, and self had influenced, and whether this had influenced the data with my contributions, and if I had been able to facilitate interaction a) using my facilitative skills b) in an online environment. This approach was great appreciated and led to the instigation of paper 2, which although resulted in a greater focus on practical and ethical issues, has greatly deepened my understanding of focus groups as a data collection method for future research.

Reflections of the use of focus groups in the fieldwork of Phase 1

In the original planning stages, groups were referred to by myself and my supervisory team as 'expert panels'; this sat well with the intention of validating the concept components identified from the theoretical phase, by those with expertise of engaging practitioners in the research process. It also was a way of collaboratively developing the concept with both researchers and practitioners, as key stakeholders. As consideration of literature and theory continued, and so informed my thinking, it became apparent that the use of the term 'expert' may not be beneficial and an expert panel as such would perhaps not generate fieldwork data, which was required to address the study objectives fully. Although it was hoped that the recruitment strategy would attract those with a level of expertise, the use of the term 'expert' may have alienated potential participants, in particular practitioners, who perhaps did not view themselves as experts, but certainly would have had the relevant experience to make a meaningful contribution to the concept development. Similarly, with researchers, the aim was to obtain a spread of experiences and so searching for so called experts may have been challenging. It raised the question of how an expert would be defined and how I could assess if a volunteer was an expert in the field.

Participants' experiences of engagement were indicated in their recruitment survey, and as analysis of this data shows in chapter four, many researchers had experience of engaging practitioners in a number of studies and across study activities. However, the very nature of this study, the development of a new concept, meant that the forms of engagement experienced could not be discerned from this recruitment survey, RPE would not resonate with participants (as not yet defined), therefore, determining who had experience of this very specific phenomenon was difficult to establish. Moreover, those who volunteered had a range of experiences both across the group, but also a range of encounters from across their own engagement experiences, which therefore offered the ability to discern between these different types of engagement, to identify the components relevant to this specific concept. This meant the theoretical framework was very important here too to help with my interpretations of their experiences and the type of engagement they were referring to.

In effect, the process of revealing the theoretical stage findings to the expert panel was a process of independent scrutiny, there was an element of interrogation of my interpretation of the instances, some questioning and so justification on my part for why elements had been included and categorised in a particular way. This was in no way challenging of decisions made, but certainly discursive and reflective on their part based on their experiences.

To establish if these were indeed focus groups, I carried out an exercise in which I watched the audio-visual recordings and made notes to indicate when and how interaction had taken place between focus group participants. This provided confidence that this was in fact a focus group as this interaction was clear. Participants would nod their heads to acknowledge agreement with what others were saying or use language that was confirmatory of points made. Points made by participants then led others to add to this, expanding and adding depth and richness to the data collected. There were also examples when participants probed each other on their comments.

To meet the primary objective of the fieldwork, the focus group schedule was positioned in such a way that questions were asked in closed manner ‘do you agree or not agree’. With hindsight, this form of questioning was limiting.

Although it was not originally intended, the audio-visual recordings could be used to observe both verbal and non-verbal communications to establish if each participant was in fact agreeing, disagreeing or partially agreeing with the proposed concept component. It had not been the intention to obtain a closed response or to quality agreement levels, but it became apparent through the analysis process, that the wording of the focus group schedule had led most to offer this information, and so could provide an indication of the components of the concept which required attention.

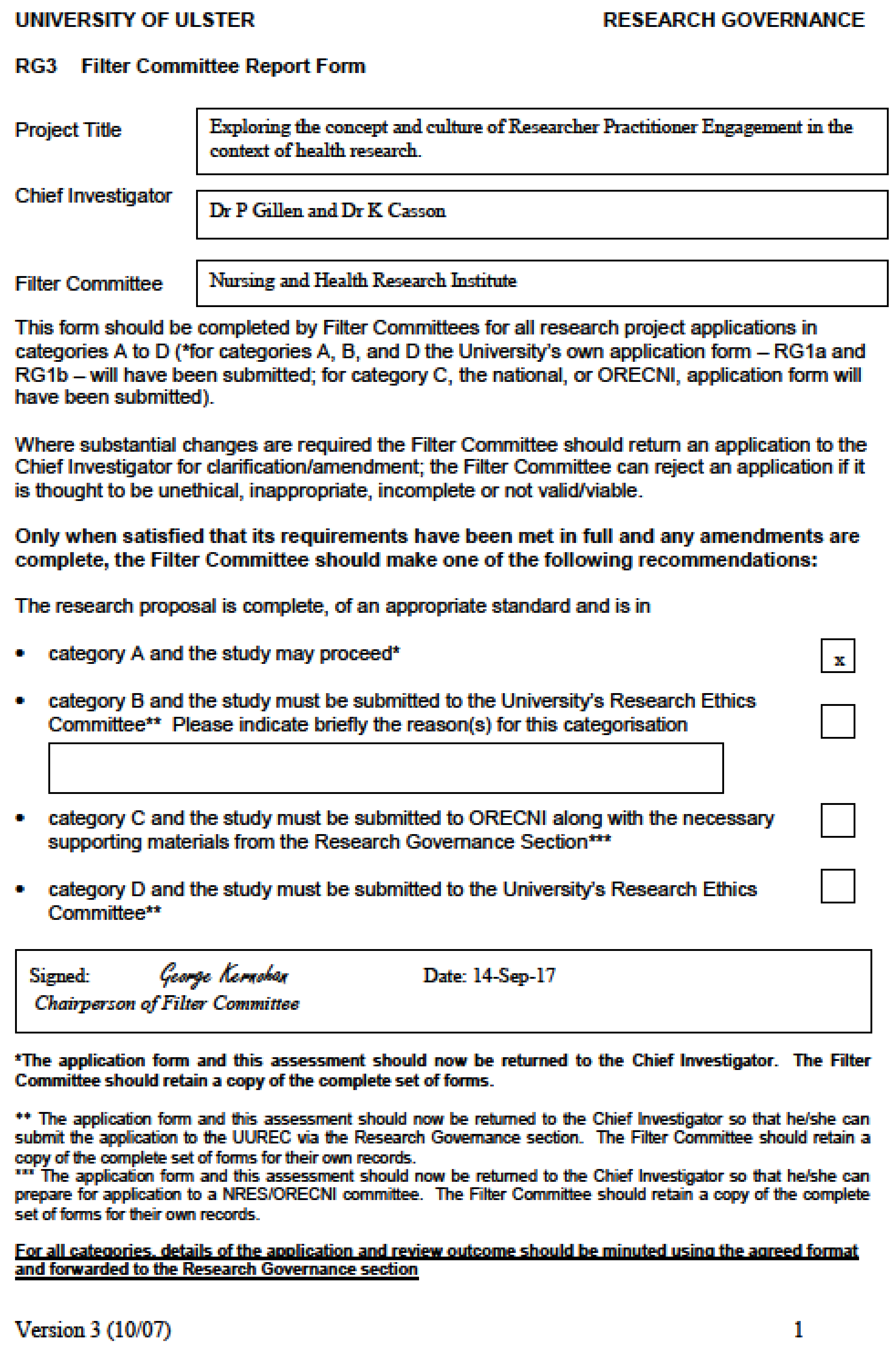
Prior to the pilot, I was concerned that the theoretical validity (referring to the research questions stated in advance) can conflict with interpretative validity (referring to what the participants find interesting). I was very aware that I was now referring to this process as a focus group, but its nature could be very different to what participants had experienced previously, either as focus group participants or as focus group facilitators themselves.

I was aware I was asking participants to call upon their experiences to develop the concept, but that the purpose was not to discuss these experiences, but to use these experiences to inform discussions around the relevancy of each concept component. I think my concern about keeping this focus was what led to the questions within the focus group schedule being so direct and perhaps closed.

One element of the pilot study was to ascertain if this concern would be realised and if so, to practice controlling these discussions to ensure the fieldwork objectives could be met (Chioncel *et al.* 2003). However, these concerns were unfounded as the focus group discussions were clearly focussed on the relevance of the concept components as intended. However, in focus group R1, this did occur; participants were keen to talk about their experiences as opposed to confirming the concept components and therefore required skill as a facilitator to control the discussions to ensure the objective was achieved. Participants had used their experiences to confirm concept components by discussing the ideal, but often followed this up with the reality. This provided additional data which were not directly addressing the research objectives, so it was essential to keep focussed on the ideal in this theoretical development, as opposed to addressing the realities.

It also proved challenging to continually ask each participant, in relation to each concept component ‘do you agree’; to do this felt more like an interview, and so in hindsight, wording of the focus group schedule perhaps could have been altered slightly to remove this element. However, it remained consistent throughout. The number of components, some with subcategories in antecedents and consequences, meant that there was also a number of individual issues to address, which was achieved, but participants did want to discuss their experiences as opposed to specifically their relevance which added to the timing of the group. More time was spent on the attributes, and therefore I feel confident in the agreement levels here, but less time spent on antecedents and consequences and their subcategories made establishing levels of agreement more challenging. Subsequent groups were allocated more time to ensure all aspects could be covered.

Appendix 13: Filter Committee Approval



UNIVERSITY OF ULSTER **RESEARCH GOVERNANCE**

RG3 Filter Committee Report Form

Project Title	Exploring the concept and culture of Researcher Practitioner Engagement in the context of health research.
Chief Investigator	Dr P Gillen and Dr K Casson
Filter Committee	Nursing and Health Research Institute

This form should be completed by Filter Committees for all research project applications in categories A to D (*for categories A, B, and D the University's own application form – RG1a and RG1b – will have been submitted; for category C, the national, or ORECNI, application form will have been submitted).

Where substantial changes are required the Filter Committee should return an application to the Chief Investigator for clarification/amendment; the Filter Committee can reject an application if it is thought to be unethical, inappropriate, incomplete or not valid/viable.

Only when satisfied that its requirements have been met in full and any amendments are complete, the Filter Committee should make one of the following recommendations:

The research proposal is complete, of an appropriate standard and is in

- category A and the study may proceed* ☒
- category B and the study must be submitted to the University's Research Ethics Committee** Please indicate briefly the reason(s) for this categorisation ☐
- category C and the study must be submitted to ORECNI along with the necessary supporting materials from the Research Governance Section*** ☐
- category D and the study must be submitted to the University's Research Ethics Committee** ☐

Signed: *George Kernohan* Date: 14-Sep-17
Chairperson of Filter Committee

***The application form and this assessment should now be returned to the Chief Investigator. The Filter Committee should retain a copy of the complete set of forms.**

** The application form and this assessment should now be returned to the Chief Investigator so that he/she can submit the application to the UUREC via the Research Governance section. The Filter Committee should retain a copy of the complete set of forms for their own records.
*** The application form and this assessment should now be returned to the Chief Investigator so that he/she can prepare for application to a NRES/ORECNI committee. The Filter Committee should retain a copy of the complete set of forms for their own records.

For all categories, details of the application and review outcome should be minuted using the agreed format and forwarded to the Research Governance section

Version 3 (10/07) 1

Appendix 14: PhD Researcher Training

Table A6: PhD Researcher Training Record

Date by academic year	Training event	Hosted by:
2018/2019		
24th May, 2019	3MT Training (Final)	Ulster University
10th May, 2019	3MT Training (Semi-Final)	Ulster University
2nd May, 2019	Viva Survivor (Nathan Ryder)	Ulster University
1st March, 2019	Turbocharge your writing (Hugh Kearns)	Ulster University
28th January, 2019	Thesis Producer: Writing in the third year of your PhD	Ulster University
18th January, 2019	Getting through the final year of your PhD	Ulster University
10th January, 2019	Communicating your research to a non-research audience	Ulster University
6th December, 2018	NVivo: Advanced qualitative data management	Ulster University
20th November, 2018	Analysing qualitative data	University East Anglia (online)
2017/2018		
9th April, 2018	Editor's advice and strategies for getting published	Ulster University
27th March, 2018	Care to write: writing in the middle of your PhD	Ulster University
16th February, 2018	7 secrets of highly successful PhD researchers (Hugh Kearns)	Ulster University
7th February, 2018	Keeping going in the second year of your doctorate	Ulster University
22nd January	SPSS: An Introduction	Ulster University
4th December, 2017	NVivo: An Introduction	Ulster University
2016/2017		
27th & 28th April, 2017	Qualitative Research Methods Summer School	University College Dublin
2nd March, 2017	'Speak up' training	University of Derby
9th January, 2017	Making Professional Presentations Researcher to Researcher	Ulster University
26th October, 2016	Research Integrity	Ulster University (online)

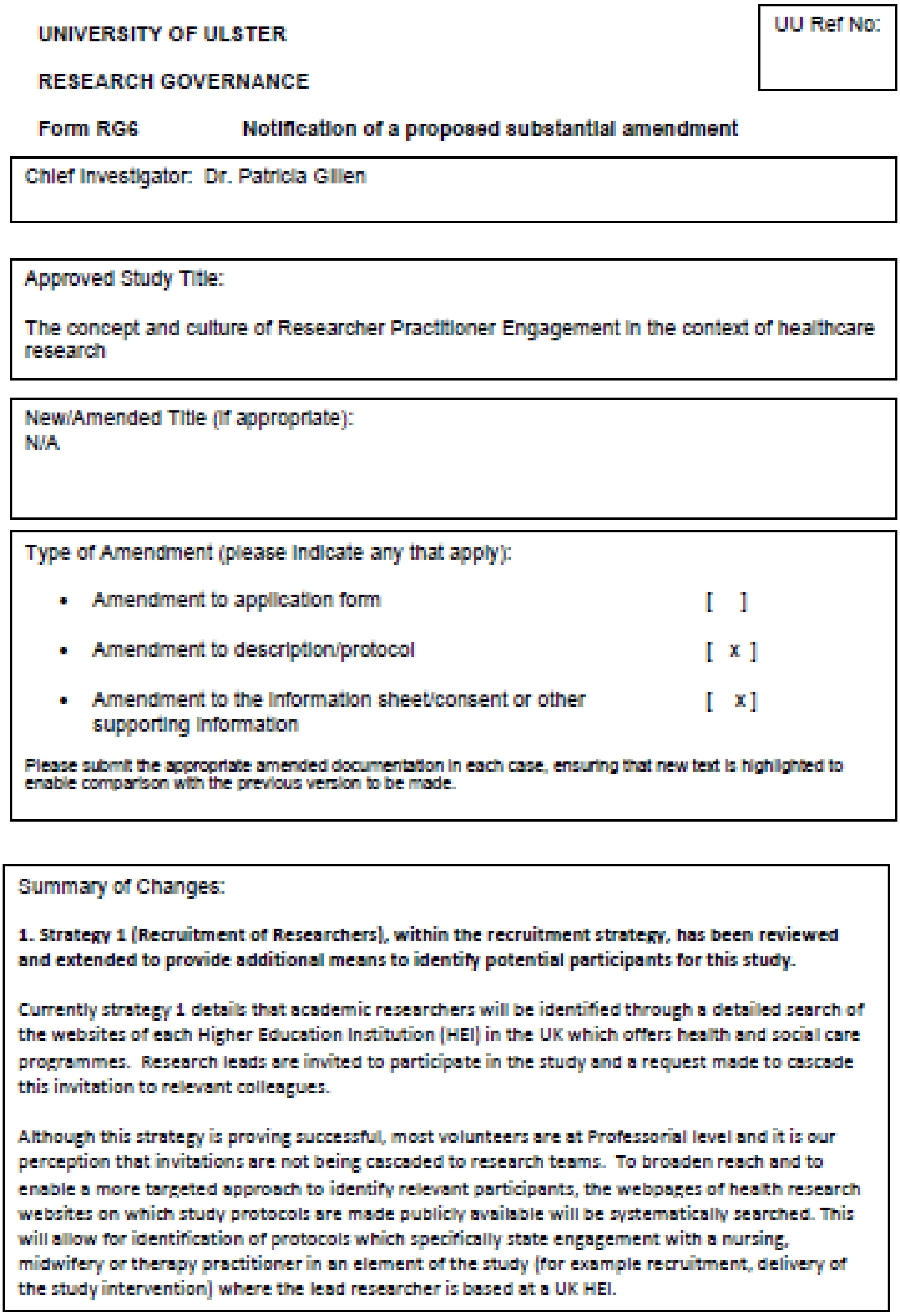
20th October, 2016	RefWorks training	Ulster University
19th October, 2016	Effective Use of the Library	Ulster University

Appendix 15: Approved changes after initial governance approval (RG6)

In total, four RG6 forms were submitted to the Chair of the Institute of Nursing and Health Filter Committee to advise of necessary changes to the study protocol. On all four occasions, this approval was granted. The table below details the timetable for these requests and the approved amendments. A copy of one approved form is subsequently shown as way of an example.

Table A7: Changes to the study approved by the Institute of Nursing and Health Research filter Committee

Date of Request	Approved amendments
27/08/2018	**Minor amendments to protocol following pilot study (Phase 1)** Approval of survey recruitment questionnaire Refinements made to inclusion criteria; changed from ‘Allied health professions’ to ‘occupational therapists, physiotherapists, speech and language therapists’ Zoom software confirmed
25/10/2018	**Addition of triangulation focus group** Including extension to study timetable to accommodate additional data collection and analysis; approval of amended communications to participants to reflect new focus group format
22/11/2018	**Extensions made to recruitment strategy** Example RG6 below
15/05/209	**Amendments made to Phase 2 data collection tool based on data derived from Phase 1** Including changes to the tool, addition of re-test request, corresponding amendments to participant communications, extension of timeline to accommodate expert review and pilot testing



UU Ref No:

UNIVERSITY OF ULSTER

RESEARCH GOVERNANCE

Form RG6 **Notification of a proposed substantial amendment**

Chief Investigator: Dr. Patricia Gillen

Approved Study Title:

The concept and culture of Researcher Practitioner Engagement in the context of healthcare research

New/Amended Title (if appropriate):
N/A

Type of Amendment (please indicate any that apply):

Amendment to application form	[ ]
Amendment to description/protocol	[x]
Amendment to the information sheet/consent or other supporting information	[x]

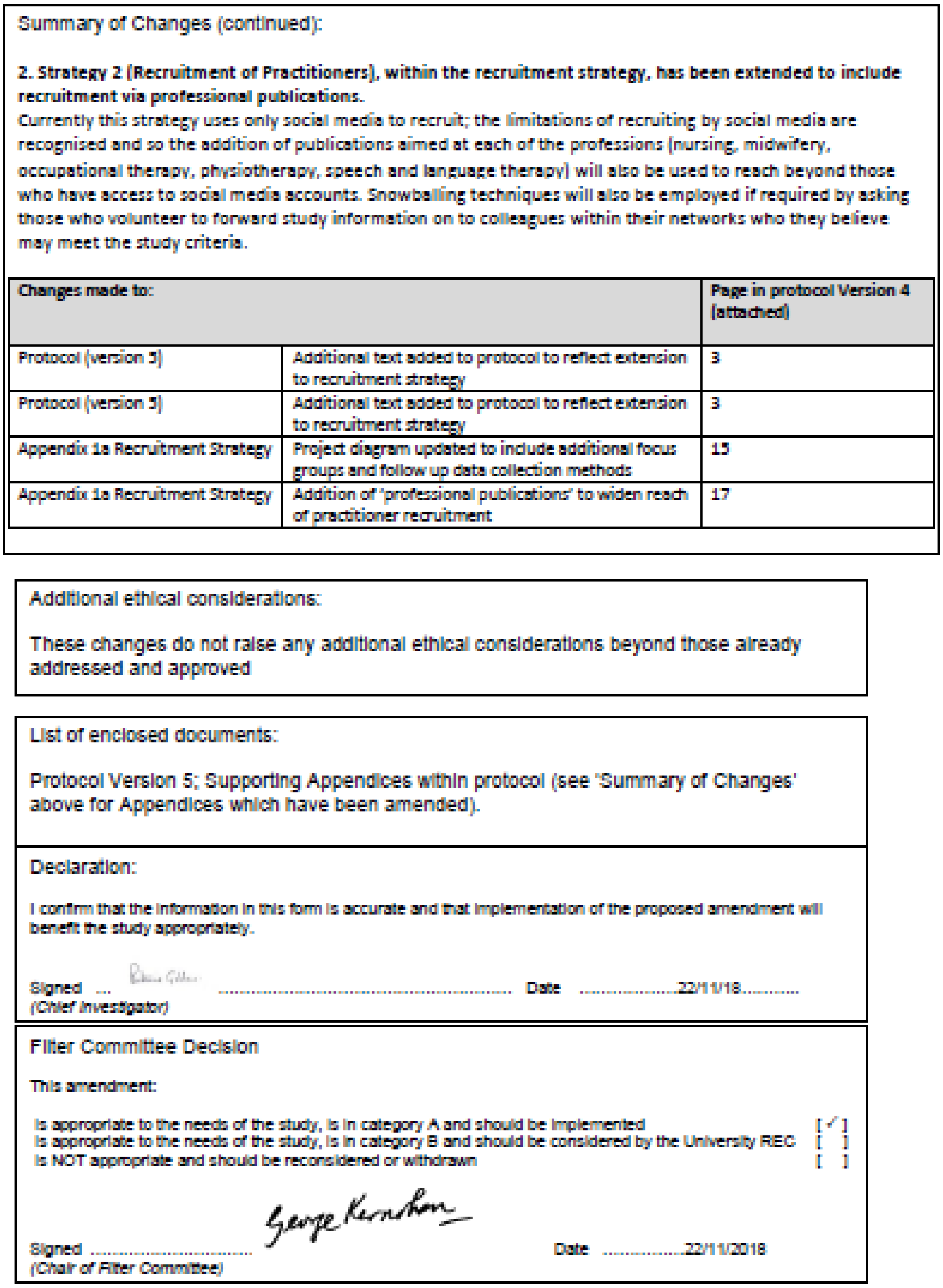
Please submit the appropriate amended documentation in each case, ensuring that new text is highlighted to enable comparison with the previous version to be made.

Summary of Changes:

1. Strategy 1 (Recruitment of Researchers), within the recruitment strategy, has been reviewed and extended to provide additional means to identify potential participants for this study.

Currently strategy 1 details that academic researchers will be identified through a detailed search of the websites of each Higher Education Institution (HEI) in the UK which offers health and social care programmes. Research leads are invited to participate in the study and a request made to cascade this invitation to relevant colleagues.

Although this strategy is proving successful, most volunteers are at Professorial level and it is our perception that invitations are not being cascaded to research teams. To broaden reach and to enable a more targeted approach to identify relevant participants, the webpages of health research websites on which study protocols are made publicly available will be systematically searched. This will allow for identification of protocols which specifically state engagement with a nursing, midwifery or therapy practitioner in an element of the study (for example recruitment, delivery of the study intervention) where the lead researcher is based at a UK HEI.



Summary of Changes (continued):

2. Strategy 2 (Recruitment of Practitioners), within the recruitment strategy, has been extended to include recruitment via professional publications.

Currently this strategy uses only social media to recruit; the limitations of recruiting by social media are recognised and so the addition of publications aimed at each of the professions (nursing, midwifery, occupational therapy, physiotherapy, speech and language therapy) will also be used to reach beyond those who have access to social media accounts. Snowballing techniques will also be employed if required by asking those who volunteer to forward study information on to colleagues within their networks who they believe may meet the study criteria.

Changes made to:		**Page in protocol Version 4 (attached)**
Protocol (version 5)	Additional text added to protocol to reflect extension to recruitment strategy	3
Protocol (version 5)	Additional text added to protocol to reflect extension to recruitment strategy	3
Appendix 1a Recruitment Strategy	Project diagram updated to include additional focus groups and follow up data collection methods	15
Appendix 1a Recruitment Strategy	Addition of 'professional publications' to widen reach of practitioner recruitment	17

Additional ethical considerations:

These changes do not raise any additional ethical considerations beyond those already addressed and approved

List of enclosed documents:

Protocol Version 5; Supporting Appendices within protocol (see 'Summary of Changes' above for Appendices which have been amended).

Declaration:

I confirm that the information in this form is accurate and that implementation of the proposed amendment will benefit the study appropriately.

Signed ... . Date ....22/11/18............
(Chief Investigator)

Filter Committee Decision

This amendment:

Is appropriate to the needs of the study, is in category A and should be implemented [✓]
Is appropriate to the needs of the study, is in category B and should be considered by the University REC [ ]
Is NOT appropriate and should be reconsidered or withdrawn [ ]

Signed .... George Kernohan Date 22/11/2018
(Chair of Filter Committee)

Appendix 16: Participant Information Sheet (Phase 1)

Participant Information Sheet: Focus Group

Study Title: 'Exploring the Concept and Culture of Researcher Practitioner Engagement in Health Care Research'

As an experienced member of the healthcare community, you are being invited to take part in this research study which forms part of a PhD project at Ulster University. The project aims to provide a definition of the concept of 'Researcher Practitioner Engagement' and explore the culture of engagement between academic healthcare researchers and frontline practitioners from nursing, midwifery and therapy disciplines.

Before you decide whether you would like to take part, it is important for you to consider why the research is being done and what it will involve. Please read this information sheet carefully.

What is the purpose of the study?

In the early stages of this project, literature which reports on the engagement of frontline practitioners from nursing, midwifery, physiotherapy, occupational therapy and speech and language therapy by academic researchers in the research process was scoped. This literature review found that although this activity is reported in various forms, there is inconsistency in the terminology used and that no dedicated or defined term exists. To address this, the term 'Researcher Practitioner Engagement' has been proposed and a concept analysis is being carried out to develop a definition. The first stage of this process has used literature to identify the tentative attributes, antecedents and consequences of 'Researcher Practitioner Engagement' or to identify the necessary pre-conditions, the defining characteristics and the potential impacts of this process. Following this first theoretical stage, a fieldwork stage is now being carried out to enable those with experience of this activity to contribute to the development of this concept.

Who is carrying out this study?

This study is being undertaken as a PhD at Ulster University within the Institute of Nursing and Heath Research under the supervision of Dr. Patricia Gillen, Dr. Karen Casson and Professor Suzanne McDonough. Further information on the Institute can be found on the webpage http://www.science.ulster.ac.uk/inhr/

The project is funded by the Department for Education and Learning (DEL).

Why have I been invited to take part?

The experiences and opinions of practitioners with experience of being engaged by academic researchers in the research process are now required to refine the tentative definition of this concept identified from the literature and to explore its feasibility. We are inviting experienced practitioners to come together to discuss their opinions on the findings of the theoretical stage of this concept analysis based on their experiences of 'Researcher Practitioner Engagement'. This experiential view will contribute to refinement and validation of the concept from the context of practice and inform the development of the survey for Phase two of the study.

Do I have to take part?

Participation is completely voluntary; we have approached you based on your experience and the contribution you could make to this project however it is understood that you may feel you are unable to contribute at this time.

What is required if I take part?

You will be asked to complete a screening questionnaire to establish some initial information about yourself and to ensure you meet the study criteria. A purposive selection process will then be carried out to ensure representation across locations and experiences. Those selected will be invited to participate in a focus group held online using webinar software. The webinar will last approximately one hour and will be facilitated by the Principal Investigator on a date and time identified as mutually convenient to all participants.

Should you agree to take part, a doodle poll will be sent to your email address offering a selection of dates and times to enable you to identify those which would be most convenient for you. These will include evenings and weekends. From the preferences selected by all participants we will endeavour to identify a date and time suitable to the majority of volunteers.

Prior to the webinar you will also be sent a two-page document that details the findings of the literature based theoretical stage of the concept analysis which presents the tentative attributes (*characteristics*), antecedents (*pre-conditions*) and consequences (*benefits or impacts*) of ‘Researcher Practitioner Engagement’ in a table format. As part of the focus group we will be discussing your thoughts on these tentative findings and exploring your experiences of this concept in greater depth based on your experiential view.

The webinar requires access to a computer or smartphone with a microphone and internet connection and will use Zoom software (©2018 Zoom). A link to the webinar will be sent via an email. There will be no requirement to download any software and no costs will be incurred by participants. Guidance and support on how to join and participate in the webinar will be provided prior to the session. You should also be able to take part in a confidential environment where other parties are not able to hear the focus group discussions. You will be asked to sign a confidentiality form to indicate that you will be in an environment that will assure confidentiality to all members of the focus group. We also ask that you do not share any of the discussion outwith the group; phase two of this study is a national survey therefore it is highly likely we may invite some of your colleagues to complete. We would like to ensure that their opinions have not been influenced by any prior knowledge of the focus group findings.

Prior to the focus group you will be asked to complete and sign an ‘Informed Consent’ form to confirm all aspects of the study have been explained to you which can be returned to the research team electronically.

After the focus group, you will be offered the option to email any additional thoughts around the attributes, antecedents, consequences or definition of the attribute to the Principal Investigator (focus group Facilitator) for up to one month after the focus group has been completed.

Withdrawal from the study is possible prior to the focus group or at any time during the focus group. Due to the discursive nature of the group, any data provided up to the point of withdrawal will be retained as your contribution may have had an influence of the contribution of others.

What are the possible benefits of taking part?

Whilst there are no immediate benefits, it is anticipated that the outcome of this study could have a beneficial impact on future research practices. The findings will be shared with you and the wider health care community in order to inform professional practice, education and research. Copies of the findings can be obtained from the Principal Investigator on request.

Will my responses be anonymous and confidential?

All information provided within the focus group will be treated in the strictest of confidence by the researcher.

Discussions will be recorded via the Zoom webinar software (©2018 Zoom) and later transcribed. You will be assigned a code known only to the research team to ensure you are not identifiable from the transcribed data. Should a third party be used to transcribe any data they will have access to the audio material only and will not be provided with participants' names. This third party will be aware of the nature of the study and the need to maintain the confidentiality of all material and will sign a confidentiality agreement. All audio recordings and transcribed data will be encrypted, password protected and held securely in line with the Data Protection Act (2018). All participants will be asked to identify a suitable environment in which to take part in the webinar which prevents the discussions from being overheard by others who are not members of the focus group. All participants will be asked to sign a consent and confidentiality form to indicate that they are able to extend this confidentiality to all members of the group.

Should you provide any information during the focus group discussions that could identify you, your department or organisation, any identifiers will be removed prior to publication as required under Data Protection legislation.

What will happen with the data produced from this focus group?

This is a two-phase study. This focus group, along with the theoretical stage of the concept analysis, forms phase one. In phase two we intend to survey researchers and practitioners across the UK to obtain a wider view on 'Researcher Practitioner Engagement' and explore its culture in greater depth and breadth. The discussions within the focus group will inform the design of this survey by helping us to refine the definition of this term. By hearing about your experiences, we will be able to identify the areas that require further investigation in phase two. It is our intention that the findings from both phases will be disseminated in professional health care publications and at conferences and will ultimately form the lead authors PhD thesis submission. **Due to its sequential nature we ask that participants do not discuss the findings of the concept analysis or the discussions held within the focus group outside of the study to prevent influence on subsequent data collection.**

Who has approved this study?

This study has been reviewed and approved in accordance with the School of Nursing and Health Research Governance Filter committee at Ulster University. Copies of this approval can be obtained from the Principal Investigator (see below).

What if there is a problem?

As this study has been carefully planned by the research team and approved by the Institute of Nursing and Health Research Governance Filter Committee at Ulster University, it is extremely unlikely that something will go wrong. However, the university has procedures in place for reporting, investigating, recording and handling adverse events and complaints. Further information on the complaints procedure can be found at the University's "Research Ethics and Governance" webpage (Internet address: https://www.ulster.ac.uk/__data/assets/pdf_file/0011/75638/Complaints.pdf). Any complaint or concerns should be made, in the first instance, to the Chief Investigator for this study (contact details are below).

Complaints will be treated seriously and reported to the appropriate authority.

Who can I contact for further information?

Nikki Daniels (Principal Investigator/PhD Researcher) Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB Email: daniels-n@ulster.ac.uk

Dr Patricia Gillen (Chief Investigator), Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB Email: p.gillen@ulster.ac.uk

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Reference:

Data Protection Act (2018) Available at https://www.gov.uk/government/collections/data-protection-act-2018

Version 3 approved by INHR Filter committee November 2018

Participant Information Sheet: Focus Group

Study Title: ‘Exploring the Concept and Culture of Researcher Practitioner Engagement in Health Care Research’

As an experienced member of the health care research community, you are being invited to take part in this research study which forms part of a PhD project at Ulster University. The project aims to provide a definition of the concept of ‘Researcher Practitioner Engagement’ and explore the culture of engagement between health care researchers and frontline practitioners from nursing, midwifery and therapy disciplines.

Before you decide whether you would like to take part, it is important for you to consider why the research is being done and what it will involve. Please read this information sheet carefully.

What is the purpose of the study?

In the early stages of this project, literature which reports on the engagement of academic researchers with frontline practitioners from nursing, midwifery, physiotherapy, occupational therapy and speech and language therapy in the research process was scoped. This literature review found that although this activity is reported in various forms, there is inconsistency in the terminology used and that no dedicated or defined term exists. To address this, the term ‘Researcher Practitioner Engagement’ has been proposed and a concept analysis is being carried out to develop a definition. The first stage of this process has used literature to identify the tentative attributes, antecedents and consequences of ‘Researcher Practitioner Engagement’ or to identify the necessary pre-conditions, the defining characteristics and the potential impacts of this process. Following this first theoretical stage, a fieldwork stage is now being carried out to enable those with experience of this activity to contribute to the development of this concept.

Who is carrying out this study?

This study is being undertaken as a PhD at Ulster University within the Institute of Nursing and Heath Research under the supervision of Dr Patricia Gillen, Dr Karen Casson and Professor Suzanne McDonough. The project is part of a PhD study which is funded by the Department of Education and Learning (DEL) in Northern Ireland. Further information on the Institute can be found on the webpage http://www.science.ulster.ac.uk/inhr/

Why have I been invited to take part?

The experiences and opinions of highly experienced researchers with expertise in engaging with practitioners in the research process are now required to refine the tentative definition of this concept identified from the literature and to explore its feasibility. We are inviting experienced academic researchers to come together to discuss their opinions on the findings of the theoretical stage of this concept analysis based on their experiences of ‘Researcher Practitioner Engagement’. This experiential view will contribute to refinement and validation of the concept from the context of practice and inform the development of the survey for Phase two.

Do I have to take part?

Participation is completely voluntary; we have approached you based on your level of research experience and the contribution you could make to this project however it is understood that you may feel you are unable to contribute at this time.

What is required if I take part?

You will be asked to complete a screening questionnaire to establish some initial information about yourself and to ensure you meet the study criteria. A purposive selection process will then be carried out to ensure representation across locations and experiences. Those selected will be invited to participate in a focus group held online using webinar software. The webinar will last approximately one hour and will be facilitated by the Principal Investigator on a date and time identified as mutually convenient to all participants.

Should you agree to take part, a doodle poll will be sent to your email address offering a selection of dates and times to enable you to identify those which would be most convenient for you. These will include evenings and weekends. From the preferences selected by all participants we will endeavour to identify a date and time suitable to the majority of volunteers.

Prior to the webinar you will also be sent a two-page document that details the findings of the literature based theoretical stage of the concept analysis which presents the tentative attributes (*characteristics*), antecedents (*pre-conditions*) and consequences (*benefits or impacts*) of ‘Researcher Practitioner Engagement’ in a table format. As part of the focus group we will be discussing your thoughts on these tentative findings and exploring your experiences of this concept in greater depth based on your experiential view.

The webinar requires access to a computer or smartphone with a microphone and internet connection and will use Zoom software (©2018 Zoom). A link to the webinar will be sent via an email. There will be no requirement to download any software and no costs will be incurred by participants. Guidance and support on how to join and participate in the webinar will be provided prior to the session. You should also be able to take part in a confidential environment where other parties are not able to hear the focus group discussions. You will be asked to sign a confidentiality form to indicate that you will be in an environment that will assure confidentiality to all members of the focus group. We also ask that you do not share any of the discussion outwith the group; phase two of this study is a national survey therefore it is highly likely we may invite some of your colleagues to complete. We would like to ensure that their opinions have not been influenced by any prior knowledge of the focus group findings.

Prior to the focus group you will be asked to complete and sign an ‘Informed Consent’ form to confirm all aspects of the study have been explained to you which can be returned to the research team electronically.

After the focus group, you will be offered the option to email any additional thoughts around the attributes, antecedents, consequences or definition of the attribute to the

Principal Investigator (focus group Facilitator) for up to one month after the focus group has been completed.

Withdrawal from the study is possible prior to the focus group or at any time during the focus group. Due to the discursive nature of the group, any data provided up to the point of withdrawal will be retained as your contribution may have had an influence of the contribution of others.

What are the possible benefits of taking part?

Whilst there are no immediate benefits, it is anticipated that the outcome of this study could have a beneficial impact on future research practices. The findings will be shared with you and the wider health care community in order to inform professional practice, education and research. Copies of the findings can be obtained from the Principal Investigator on request.

Will my responses be anonymous and confidential?

All information provided within the focus group will be treated in the strictest of confidence by the researcher.

Discussions will be recorded via the Zoom webinar software (©2018 Zoom) and later transcribed. You will be assigned a code known only to the research team to ensure you are not identifiable from the transcribed data. Should a third party be used to transcribe any data they will have access to the audio material only and will not be provided with participants' names. This third party will be aware of the nature of the study and the need to maintain the confidentiality of all material and will sign a confidentiality agreement. All audio recordings and transcribed data will be encrypted, password protected and held securely in line with the Data Protection Act (2018). All participants will be asked to identify a suitable environment in which to take part in the webinar which prevents the discussions from being overheard by others who are not members of the focus group. All participants will be asked to sign a consent and confidentiality form to indicate that they are able to extend this confidentiality to all members of the group.

Should you provide any information during the focus group discussions that could identify you, your department or organisation, any identifiers will be removed prior to publication as required under Data Protection legislation.

What will happen with the data produced from this focus group?

This is a two-phase study. This focus group, along with the theoretical stage of the concept analysis, forms phase one. In phase two we intend to survey researchers across the UK to obtain a wider view on 'Researcher Practitioner Engagement' and explore its culture in greater depth and breadth. The discussions within the focus group will inform the design of this survey by helping us to refine the definition of this term. By hearing about your experiences, we will be able to identify the areas that require further investigation in phase two. It is our intention that the findings from both phases will be disseminated in professional health care publications and at conferences and will ultimately form the lead authors PhD thesis submission. **Due to its sequential nature we ask that participants do not discuss the findings of the concept analysis or the discussions held within the focus group outside of the study to prevent influence on subsequent data collection.**

Who has approved this study?

This study has been reviewed and approved in accordance with the School of Nursing and Health Research Governance Filter committee at Ulster University. Copies of this approval can be obtained from the Principal Investigator (see below).

What if there is a problem?

As this study has been carefully planned by the research team and approved by the Institute of Nursing and Health Research Governance Filter Committee at Ulster University, it is extremely unlikely that something will go wrong. However, the university has procedures in place for reporting, investigating, recording and handling adverse events and complaints. Further information on the complaints procedure can be found at the University's "Research Ethics and Governance" webpage (Internet address: https://www.ulster.ac.uk/__data/assets/pdf_file/0011/75638/Complaints.pdf). Any complaint or concerns should be made, in the first instance, to the Chief Investigator for this study (contact details are below).

Complaints will be treated seriously and reported to the appropriate authority.

Who can I contact for further information?

Nikki Daniels (Principal Investigator/PhD Researcher) Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB Email: daniels-n@ulster.ac.uk

Dr Patricia Gillen (Chief Investigator), Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB Email: p.gillen@ulster.ac.uk

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Version 3 approved by INHR Filter committee November 2018

Appendix17: Expert Review of Survey Tool (Phase 2)

This appendix provides further detail on the process and outcome of the expert review of the tool designed to collect data in Phase 2.

Firstly, the instructions sent to each of the reviewers are presented.

This is followed by exemplar sections of the survey and the reviews provided to demonstrate the process adopted.

The collated Content Validation Index scores for all questions in Section C, which relate to the measurement of the extent of the presence of the concept components, are presented.

Finally, the changes made to the data collection tool as a result of the expert review are listed.

Instructions sent to expert reviewers

Instructions to expert reviewers: evaluation of survey

Thank you for agreeing to evaluate our survey which we plan to use as a data collection tool in the second phase of a two-phase mixed methods study. Below, we have outlined a brief background to the study and the findings of the first phase, which you may find useful to assist you with the evaluation process. This is followed by an overview of what is involved in the review and guidance to assist you in this process.

Background to the study

In the early stages of this project, literature which reports on the engagement of frontline practitioners (nursing, midwifery, physiotherapy, occupational therapy and speech and language therapy) by academic researchers in the research process was scoped. The focus was to specifically identify literature which reported on if and how academic researchers engage practitioners in their research endeavours, in a role other than as a participant, in the design, conduct and/or dissemination of a study. The review found that although this activity is reported in various forms, there is inconsistency in the terminology used to describe it and that no dedicated or defined term exists to guide researchers or practitioners in this process.

To address this, a study was designed to develop the concept of ‘Researcher Practitioner Engagement’; a concept analysis was carried out to identify the attributes (defining characteristics), antecedents (necessary pre-conditions) and consequences (potential outcomes) of this proposed concept. In a preliminary theoretical stage, we analysed definitions and published incidences of this phenomena and in a fieldwork stage, academic researchers and frontline practitioners from across the United Kingdom, used their experiential knowledge to refine the concept via online focus groups. Findings from both stages were combined, the outcome of which is presented in the table below.

Table 1: Outcome of Phase 1: Development of the concept 'Researcher Practitioner Engagement'

Attributes

- Varies in level and type dependent on study design (but always in the formative stages)
- Mutually beneficial
- Empowers practitioners to influence the research process by recognising equitable value of research and clinical skills, knowledge and perspectives to the research process
- Clinically informed problem solving and inclusive decision making in relation to relevant study activities (facilitated by open dialogue)

Antecedents

- Vested common interest in a study topic and its outcomes
- Initiation and forming of a collaborative relationship
- Organisational culture of integrated research
- Realising and addressing challenges within clinical context that could impact on researcher practitioner engagement

Consequences

- Individual research capacity building
- Practice development
- Improved clinical significance of a study and its outcomes (relevancy and usability)

Definition of Researcher Practitioner Engagement

Researcher practitioner engagement is a mutually beneficial process, through which practitioners are engaged by researchers to actively contribute to the production of research-derived knowledge which is meaningful to their practice. Practitioners' clinical perspectives, skills and/or knowledge influence a study from its formative stages and, through open dialogue, are used to problem solve and inform decision making in relevant study activities to optimise the clinical relevance of the study and its outcomes.

Purpose of the survey

The objective of the second phase of this mixed study is to investigate the culture of researcher practitioner engagement across the United Kingdom. We want to establish if the engagement experiences of academic researchers and frontline practitioners align with the attributes, antecedents and consequences established in phase 1. We also want to explore further the feasibility of this concept and so by thematically analysing the focus group discussions, we have identified a range of factors relating to each attribute, antecedent and consequence which could impact on its feasibility. The survey items have therefore been developed from the outcome of the concept analysis carried out in phase 1. The survey will be distributed to two populations;

1. frontline practitioners (nurses, midwives, occupational therapists, physiotherapists and speech and language therapists) who deliver direct care to patients within a healthcare organisation and have engaged with an academic researcher in the research process, in a role other than as a participant,
2. academic researchers (a researcher employed wholly by a University in the United Kingdom (UK) or carrying out doctoral level studies at a UK University) who have engaged with practitioners, in a role other than as a participant, during studies in which they were the principal investigator.

Participants are asked to use their experience from one study from the past three years, which is completed or near completion, in order to complete the survey.

On page 4, you will find some guidance on how to evaluate the survey and a link to access the survey online. If your preference would be to rate this survey in paper format, please contact us and a copy can be made available to you.

On page 5, you will find some detail on each of the three survey sections.

Evaluation process (Face and content validation)

As an academic researcher with relevant experience in this area, you are being asked to validate this survey from your perspective and therefore evaluate the questions that will be presented to academic researcher participants only. Only these questions will be shown to you during the evaluation.

Each of the survey questions will be presented to you individually but **you will not be required to respond to the actual survey questions. The questions that you are required to answer which evaluate the survey questions are in blue text and marked 'ACTION REQUIRED' to help you to locate them.** Beneath each survey question, you will be asked to rate each of the questions on a scale of 1 (highly relevant) to 4 (not relevant) and where a score of 2 or 1 is given, suggestions can be made on how to improve the relevance of the question and the specific statements relating to that question. The scores you provide will be quantitively analysed alongside the scores provided by other experts taking part in this exercise to determine which items should remain in the survey. Open comments will be considered alongside those of other comments provided and used to develop the survey prior to distribution to the study sample.

Suggestions as to what you should consider or provide comment on as part of your evaluation are listed below:

Relevance of questions: questions are unbiased and do not lead the participants to a response, questions relate to the daily practices or expertise of the potential participants, measures the antecedents, attributes and consequences of the concept under consideration

Relevance of responses: responses are unbiased and do not lead the participants to a response, choices listed are comprehensive and allow participants to respond appropriately.

Clarity of questions: questions are concise, participants can understand what is being asked, terms used are understandable to the target population

Clarity of responses: no response covers more than one response option, all possibilities are considered, no responses are ambiguous

It is anticipated that this process will take less than one hour. A back button is provided so you can return to edit previous responses. Should you need to, you can exit the survey and return to the evaluation later and your responses so far will be saved. Your review will be anonymous. We do not ask you to provide any personal information within the evaluation survey.

The survey and content validation questions can be accessed here

Survey Structure

Introduction

This section provides guidance to the potential participant, includes a link to the Participant Information Sheet (PIS) and requires informed consent to be provided to access the survey. You will be asked to provide an overall comment on the clarity of the instructions provided and give any suggestions to improve this section, if deemed necessary

Section A: You and your role

This section includes 5 closed questions in which participants are asked to select from a range of responses to provide demographic information to help us to establish their discipline, their role and where they are based. You will be asked to provide an overall comment on the clarity of these questions and give any suggestions to improve this section, if deemed necessary.

Section B: Your engagement experience

This section includes 6 closed questions in which participants are asked to select from a range of responses to provide information relating to their engagement experiences in relation to one study in the past three years. You will be asked to provide an overall comment on the clarity of these questions and give any suggestions to improve this section, if deemed necessary.

Section C: Attributes, antecedents, consequences and empirical referents

This section includes approximately 30 closed questions in which participants are asked to use a range of Likert scales to rate their responses to statements which relate to each of the attributes, antecedents and consequences of this concept. You will be asked to rate each of the questions in this section on a scale of 1 (highly relevant) to 4 (not relevant) and where a score of 2 or 1 is given, suggestions can be made on how to improve the relevance or you can advise to remove the question.

Example of expert responses to a question in section A

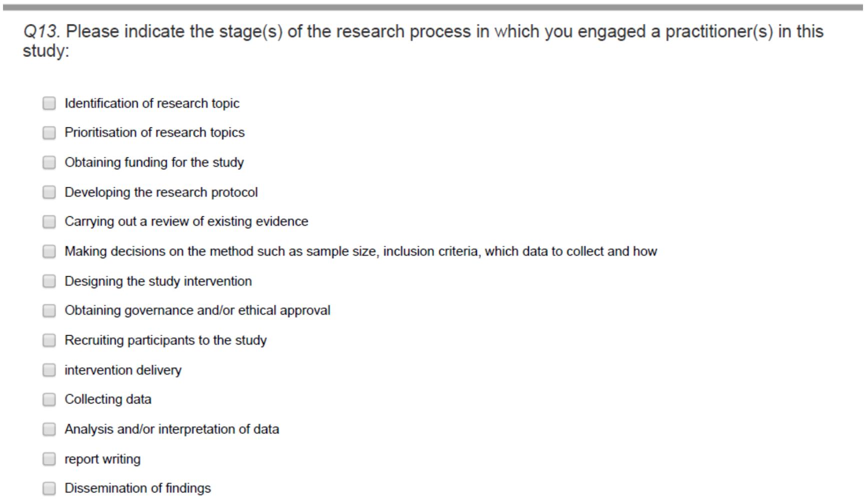
Q3. Which best describes your role?

○ PhD Researcher (Full time)
○ PhD/Doctoral Researcher (part time)
○ Research Fellow or Research Associate
○ Reader or Lecturer with research responsibilities
○ Clinical Academic
○ Associate Professor
○ Professor
○ Other

Table A8: Expert Reviewers' feedback on question 3 (Section A)

Academic Researchers		ND Response
Reviewer 1	No Masters level - fine if that's intentional. I am wondering about having the three levels of academic: Lecturer or Reader (which is usually compatible with a senior lecturer and thus, not at parity), Assoc Prof. and Prof.	Do not want to include master's researchers as this is a different context/role perhaps, more likely part time; do they fall under my definition of academic researcher? If not, why not? Revisit academic distinctions
Reviewer 2	As you have clinical academics in here - this maybe indicates in the previous question - the importance of teasing that out (as inferred)?	Need to give this thought in relation to the last question which asks them to make a clear distinction between being an academic and being a practitioner. This was included because 2 researchers (Professors) in Phase 1, employed by a university, referred to themselves as clinical academics
Reviewer 3	You might want to ask what grade of clinician the person is. It seems here that this is very swayed towards academics as you have lots of classifications for them but not so many for clinical colleagues	Need to consider in light of above comment; reviewer perhaps has not appreciated that a separate survey has been designed for practitioners so practitioner options not included here. It is good however that they are also giving feedback with practitioner's lens
Reviewer 4	I'm not sure how familiar respondents will be with the term clinical academic	As above; need to reconsider this option

Example of expert responses to a question in section B



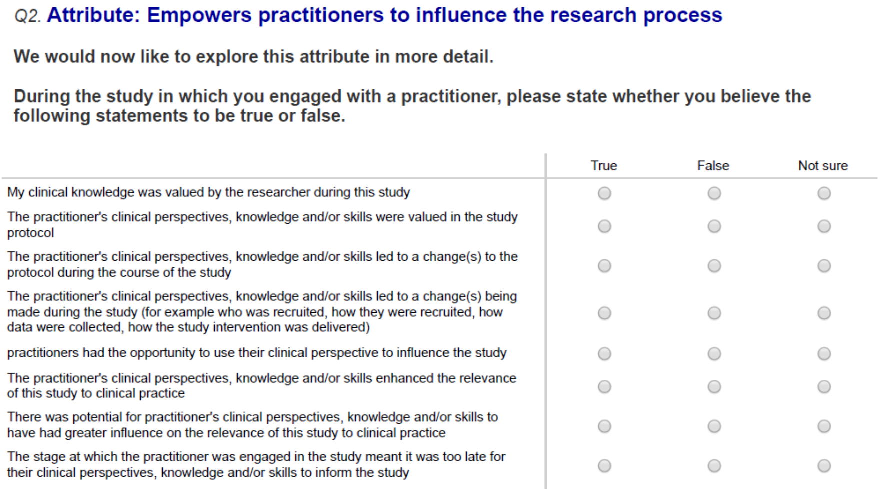
Q13. Please indicate the stage(s) of the research process in which you engaged a practitioner(s) in this study:

☐ Identification of research topic
☐ Prioritisation of research topics
☐ Obtaining funding for the study
☐ Developing the research protocol
☐ Carrying out a review of existing evidence
☐ Making decisions on the method such as sample size, inclusion criteria, which data to collect and how
☐ Designing the study intervention
☐ Obtaining governance and/or ethical approval
☐ Recruiting participants to the study
☐ intervention delivery
☐ Collecting data
☐ Analysis and/or interpretation of data
☐ report writing
☐ Dissemination of findings

Table A10: Content validation Index scores (Section B)

	Rating Relevance	Clarity	ND Response
Academic Researcher			
Reviewer 1	4	Add in the instruction to 'tick all that apply' or something along those lines	Edit to reflect suggestion
Reviewer 2	4	-	-
Reviewer 3	4	All fine	-
Reviewer 4	4	-	-
Practitioner			
Reviewer 1	3	Study is only at analysis stage, so can't select any other options, but nowhere to reflect this is due to timing	Add an option to indicate if they are referring to a study that has not yet been completed

Examples of expert responses to questions in section C



Q2. **Attribute: Empowers practitioners to influence the research process**

We would now like to explore this attribute in more detail.

During the study in which you engaged with a practitioner, please state whether you believe the following statements to be true or false.

	True	False	Not sure
My clinical knowledge was valued by the researcher during this study	○	○	○
The practitioner's clinical perspectives, knowledge and/or skills were valued in the study protocol	○	○	○
The practitioner's clinical perspectives, knowledge and/or skills led to a change(s) to the protocol during the course of the study	○	○	○
The practitioner's clinical perspectives, knowledge and/or skills led to a change(s) being made during the study (for example who was recruited, how they were recruited, how data were collected, how the study intervention was delivered)	○	○	○
practitioners had the opportunity to use their clinical perspective to influence the study	○	○	○
The practitioner's clinical perspectives, knowledge and/or skills enhanced the relevance of this study to clinical practice	○	○	○
There was potential for practitioner's clinical perspectives, knowledge and/or skills to have had greater influence on the relevance of this study to clinical practice	○	○	○
The stage at which the practitioner was engaged in the study meant it was too late for their clinical perspectives, knowledge and/or skills to inform the study	○	○	○

Table A11: Content Validation Index scores (Section C)

	Rating Relevance	Clarity	ND Response
Academic Researchers			
Reviewer 1	4	I know that a binary choice makes the results easier to analysis, but I think most people find this very difficult. I would be more inclined to go down the Likert route of all the time, most of the time, some of the time, rarely, never. I would read that statement 3 and 4 are the same, even though one mentions the protocol specifically. Does it really matter when the change took place? Maybe.	Review use of binary options Review statements; what was my intention when including these two statements

Outcome of Expert Review: Content Validity Index Scores

Section C Attributes					
Qualtrics reference	Academic Researchers Expert Reviewers				Practitioner
	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 1
1	4	3	4	3	4
2	4	4	-	4	4
3	4	3	4	4	3
4	4	4	-	4	4
5	4	4	4	4	3
6	4	4	-	4	2
7	4	4	3	4	4
8	4	3	-	4	2
9	4	3	3	4	3
10	4	3	3	4	3
11R	4	4	-	4	n/a
11P	n/a	n/a	n/a	n/a	1
12R	4	4	-	4	n/a
12P	n/a	n/a	n/a	n/a	2
13	4	3	3	4	4
14	4	4	3	4	4
56	4	3	-	4	4
61	4	4	4	4	4
65	4	3	-	4	2
69	4	3	-	4	3
73	4	3	-	3	4
76	4	4	3	4	4

Assessment of questions which were scored 1 or 2 by expert reviewers:

Question 8, 11P, 12P & 65 all relate to problem solving:

Practitioner Reviewer comment:

"Some of the questions only slightly different in wording, so struggled to answer these, as it felt repetitive"

"I want to answer 'Not sure', but there isn't an option to do this."

Action taken: Repetitive of previous question (11P); rationalised into one question and statements reduced. The practitioner has commented with a response that states that she was not engaged until after the protocol was written so her problem solving and decision making would not have changed this. I interpret this that she is not assessing the relevance of the questions, but is basing her ratings on her personal responses to the questions

Section C Antecedents					
Qualtrics reference	Academic Researchers Expert Reviewers				Practitioner
	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 1
1	4	3	4	3	4
2	4	4	3	3	4
3	3	-	3	3	4
4	4	3	3	3	4
5	4	4	4	3	4
6	4	4	4	3	3
7P	n/a	n/a	n/a	n/a	4
7R	4	4	4	4	n/a
8	n/a	n/a	n/a	n/a	3

Section C Consequences					
Qualtrics reference	Academic Researchers Expert Reviewers				Practitioner
	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 1
1	4	3	4	4	3
2P	n/a	n/a	n/a	n/a	4
2R	4	4	4	4	n/a
3	4	4	4	4	4
4	4	3	4	4	3
5P	n/a	n/a	n/a	n/a	3
5R	4	4	4	4	n/a
6R	4	4	4	4	n/a
6P	n/a	n/a	n/a	n/a	3

Section C Measurement					
Qualtrics reference	Academic Researchers Expert Reviewers				Practitioner
	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 1
1	4	4	3	4	4
3	4	4	3	4	3

Overview of changes made to Phase 2 data collection tool post expert review

Table A12: Overview of changes made to data collection tool following expert review

Section	Action taken	Justification
Introduction	Opening statement reviewed	To make language less technical, expanded background to optimise understanding
Introduction	Sections shortened, for example, consent section made more condensed	Reduce participant burden, reduce overall length of questionnaire/amount of reading required
Section B (Your engagement experience)	Removed section which explored reasons why did not engage	Not relevant to the objectives of this study would require those who do not meet the criteria to access the survey
Section C (Attributes)	Number of questions reduced by combining questions and rationalising statement responses *(see table below)*	Reviewers observed repetition across questions Survey needs to be reduced; takes too long to complete Questions need to focus specifically on addressing the objectives and not collecting additional data
Section C (Attributes) **Section C (Antecedents)** **Section C (Consequences)**	Introductory statement added to each attribute, antecedent and consequence	Communicate the finding from Phase 1 to ensure respondents understand the intended meaning of each concept component
All sections	Minor edits	Grammatical errors noted by expert reviewers

Appendix18: Pilot Study (Phase 2)

Overview of pilot testing (Phase 2)

Table A8: Overview of pilot testing (Phase 2)

Date:	5th July to 26th July 2019
Requests to participate sent to:	*Researchers:* 5 researchers known to the research team who met the inclusion criteria *Practitioners:* 5 practitioners who had volunteered for Phase 1 fieldwork but were not available for scheduled groups
Responses received	Researchers n=4 PhD Researcher (n=1) Reader (n=1) Clinical academic (n=1) Research Fellow (n=1) Practitioners n=2 Nurse (n=1) Occupational Therapist (n=1)
Time to complete (in minutes):	Researchers: 49, 18, 28, 36 Mean 33 minutes Practitioners: 22, 86 Mean 54 minutes
Feedback received from participants following completion of pilot survey	
Practitioners	**Action to be taken**
“*As a clinical research nurse, I felt difficulty responding to some questions as being a study co-ordinator on research studies is my day to day job*”	Data cannot be used as practitioner is a Research Nurse and does not meet inclusion criteria. Ensure survey is set up to end survey at this point to prevent unnecessary completion
“*Survey was easy to follow and navigate. Only one question seemed confusing to me: When answering the survey about an ongoing study the survey then asks you to "indicate the status" - I wasn't sure what was meant by that? I just answered 'ongoing'.*	All survey activities from Section B to be added to a list to allow selection of current status

Maybe having a dropdown list or example of what you mean would help? Good luck with the rest of your project! Will be interested to read the findings!"	
Researchers	**Action to be taken**
"In my study, practitioner engagement took place at various levels and I felt it was difficult to reflect this in my responses"	Ensure respondents respond to questions relating to ONE practitioner only; request they select the practitioner with whom they perceive they engaged at the greatest level to ensure responses portray the maximum engagement experienced
"I found the survey easy to navigate and in the main the questions were unambiguous. Perhaps considering that the practitioner might have a role in developing research in their area and therefore have time allocated to this duty may have been important"	Does not align with the survey objectives
"Overall I thought it was nicely laid out; it is long but I understand you need to cover various aspects of RPE so you need this amount of space to do it. Just a couple of minor points" *"In terms of criteria, you need someone who is PI, yet whenever you go on to provide role options there is an option for research associates. As an RA, I am not the PI so when I was reading this, it would exclude me"* *"Could you maybe add a % completion bar? It is tough to keep going when you have no idea how much longer is left"*	Remove reference to PI in instructions Completion bar added
Researcher's (ND) notes	**Action to be taken**
Error noted in survey flow; final question in Section C did not show to researcher respondents	Amend flow to ensure question shown to researchers
Practitioner who indicated they had initiated the engagement with the practitioner, was able to complete the survey	Ensure if 'practitioner initiated' is selected, respondent is immediately directed to end of survey message
Survey to be edited so those who indicate they are in a research role (research nurse, midwife or therapist) will be directed to the end of the survey with an appropriate end of survey message	

Changes made to the number of questions included in each survey section following expert review and pilot testing

	Number of questions					
	Version 1 (Version reviewed by experts)		**Version 2** (Version pilot tested)		**Version 3** (Final version)	
Section A: You and your role	10		9		7	
Section B: Your engagement experience	6		9		9	
Section C: Concept components	Attributes	19	Attributes	7	Attributes	7
	Antecedents	7	Antecedents	7	Antecedents	7
	Consequences	6	Consequences	6	Consequences	6
	Empirical referents	2	Empirical referents	1	Empirical referents	1
Total	49		39		37	

Appendix 19: Participant Information Sheets (Phase 2)

Participant Information Sheet: Survey for Academic Researchers

Study Title: 'Exploring the Concept of Researcher Practitioner Engagement in the Context of Health Care Research'

As a member of the health care research community, you are being invited to complete this survey as part of a larger study. The project aims to explore the culture of engagement between health care researchers and front-line practitioners. The following information provides further guidance on the purpose of the study and what taking part will involve. Please do not hesitate to ask any questions about anything that might not be clear.

What is the purpose of the study?

We have identified the lack of a universal term to describe the process of engagement between researchers and frontline practitioners in the context of health care research. As a result, we have proposed the use of the term 'Researcher Practitioner Engagement' in order to develop a theoretical foundation and evidence base for this practice. The overall aim of this study is to explore the concept and culture of engagement between researchers and practitioners in the context of health research in the United Kingdom. The study is being carried out in two phases. Phase one has now been completed. In the first stage we carried out an analysis of the concept of 'Researcher Practitioner Engagement' by tentatively identifying the characteristics of this concept and its potential impact from published literature and refining this with academics and professionals with experience in this field.

This survey forms phase two of the study. The aim is to explore the culture of 'Researcher Practitioner Engagement' from the individual experiences of researchers like yourself. To achieve this, we are asking academic researchers who have engaged with nurses, midwives, occupational therapists, physiotherapists or speech and language therapists in their research in a role other than as a participant during the past 3 years, to take part in phase two to help us obtain a broader perspective on the culture of 'Researcher Practitioner Engagement'.

Who is carrying out this study?

This study is being undertaken as a PhD at Ulster University within the Institute of Nursing and Heath Research under the supervision of Dr. Patricia Gillen, Dr. Karen Casson and Professor Suzanne McDonough. Further information on the Institute can be found on the webpage http://www.science.ulster.ac.uk/inhr/

Why have I been invited to take part?

We are interested in hearing about the experiences of academic researchers who have completed a research study in a health care context within the past three years and who have engaged with a nurse, midwife, occupational therapist, physiotherapist or speech and language therapist in this research in any stage of the research process, in a role other than as a participant. We have therefore identified you as a potential participant. We will be inviting a number of researchers like yourself to complete this survey and hope to explore a range of experiences.

What is required if I take part?

Participation in this study involves completion of an online survey that relates to one research study completed in the past three years. Completion of the online survey will act as implied consent.

Section A asks for some information about you and your role, section B asks you to provide information on the engagement you experienced, and the remaining sections explore your experiences in alignment with the attributes, antecedents and consequences of 'Researcher Practitioner Engagement' which we established in phase 1 of our study. All questions are closed and require you to select pre-determined responses. There is the option to add comments at the end of the survey should you wish to. The survey should take a maximum of 25 minutes to complete.

If you prefer to complete a paper copy of the survey, this can be requested from the research team.

We would also be grateful if you could forward the link to this survey to any colleagues who you think may also have engaged with a practitioner for research purposes so we can reach as many researchers as possible.

What are the possible benefits of taking part?

Whilst there are no immediate benefits it is anticipated that the outcome of this study could have a beneficial impact on future research policy, practice, education and research. The findings will be shared with you and the wider health care research community via professional publications in order to inform professional practices.

Will my responses be anonymous and confidential?

The survey has been designed to ensure that none of the information you provide can lead to your identification. In addition, the anonymity functions will be used within the survey software (Qualtrics) to ensure your name, email or IP address are NOT collected. You will be asked to provide a unique identification code that will be known only to yourself. Should you decide to withdraw from the study you may contact the research team via a named administrator up until the data analysis process has been completed (*30th October 2019*) quoting this code. The administrator will forward your code to the researcher to enable your completed survey to be withdrawn. The administrator will not provide your email address or any other potential identifying information to the research team so your anonymity to the team is guaranteed throughout the study.

Contact details should you wish to withdraw:
Paul Henry, Academic Excellence Executive Assistant, Institute of Nursing and Health Research
Telephone +44(0)2890366542
Email p.henry@ulster.ac.uk

At the end of the survey, you will be directed to a separate link which allows you to provide a contact email address should you wish to be invited to take part in any subsequent research which emerges from this study and/or would be willing to complete a second brief survey of a similar format in approximately two weeks time. Both are completely optional. The research team will not be able to link this expression of interest to your completed survey and your details will be held securely.

Should you choose to provide your email address, this will be held securely on a password protected University server, used only for the purposes indicated and removed from our records once the study is complete in line with Ulster University's General Data Protection Regulation (GDPR) policy (Ulster University 2018). Should you provide any information in your responses that could identify you, your department or organisation, these identifiers will be removed prior to publication.

What will happen with the data produced from this survey?

It is our intention that the findings from both phases of this study will be disseminated in peer reviewed and professional health care publications and at conferences and will ultimately form the basis for the Principal Investigator's PhD thesis. Copies of the findings can be obtained from the Principal Investigator on request.

Who has approved this study?

This study has been reviewed and approved in accordance with the Institute of Nursing and Health Research Governance Filter committee at Ulster University. A copy of this approval can be obtained from the Principal Researcher (see below).

What if there is a problem?

As this study has been carefully planned by the research team and approved by the Institute of Nursing and Health Research Governance Filter Committee at Ulster University, it is extremely unlikely that something will go wrong. However, the university has procedures in place for reporting, investigating, recording and handling adverse events and complaints. Further information on the complaints procedure can be found at the University's "Research Ethics and Governance" webpage (Internet address: https://www.ulster.ac.uk/__data/assets/pdf_file/0011/75638/Complaints.pdf). Any complaint or concerns should be made, in the first instance, to the Chief Investigator for this study (contact details are below).

Complaints will be treated seriously and reported to the appropriate authority.

Who can I contact for further information?

Nikki Daniels (Principal Researcher/PhD Candidate) Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB Email: daniels-n@ulster.ac.uk

Dr Patricia Gillen (Chief Investigator), Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB p.gillen@ulster.ac.uk
Dr Karen Casson (Academic Supervisor), Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB Email. k.Casson@ulster.ac.uk
Ulster University Research Governance Office
Nick Curry, Head of Research Governance Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB n.curry@ulster.ac.uk

Reference: Ulster University (2018) ULSTER UNIVERSITY GENERAL DATA PROTECTION REGULATION POLICY Available at https://www.ulster.ac.uk/__data/assets/pdf_file/0006/286008/ulster-university-gdpr-policy.pdf

Version 2 approved by INHR Filter committee May 2019

Participant Information Sheet: Survey for Practitioners

Study Title: 'Exploring the Concept of Researcher Practitioner Engagement in the Context of Health Care Research'

As a member of the health care community, you are being invited to take part in a survey as part of a larger study. The project aims to explore the culture of engagement between health care researchers and frontline practitioners. The following information provides further guidance on the purpose of the study and what taking part will involve. Please do not hesitate to ask any questions about anything that might not be clear.

What is the purpose of the study?

We have identified the lack of a universal term to describe the process of engagement between researchers and frontline practitioners in the context of health care research. As a result, we have proposed the use of the term 'Researcher Practitioner Engagement' in order to develop a theoretical foundation and evidence base for this practice. Therefore, the overall aim of this study is to explore the concept and culture of engagement between researchers and practitioners in the context of health research in the United Kingdom. The study is being carried out in two phases. Phase one has now been completed. In this first stage we carried out an analysis of the concept of 'Researcher Practitioner Engagement' by tentatively identifying the characteristics of this process and its potential benefits and impacts from published literature and refining this with academics and professionals with experience in this field.

This survey forms phase two of the study. This second phase explores the concept of 'Researcher Practitioner Engagement' and its culture in greater depth and breadth through the individual experiences of practitioners like yourself. To achieve this, we are asking practitioners from across the United Kingdom from nursing, midwifery, occupational therapy, physiotherapy and speech and language therapy disciplines to complete this survey to help us to obtain a broader and deeper perspective of the culture of 'Researcher Practitioner Engagement'. This will help to guide and inform future practice in this area.

Who is carrying out this study?

This study is being undertaken as a PhD at the Ulster University within the Institute of Nursing and Heath Research under the supervision of Dr. Patricia Gillen, Dr. Karen Casson and Professor Suzanne McDonough. Further information on the Institute can be found on the webpage http://www.science.ulster.ac.uk/inhr/

Why have I been invited to take part?

We are interested in hearing about the experiences of practitioners who have ‘engaged’ in a research study with a health care researcher in the past three years. By ‘engaged’ we mean that you have interacted in any way with a researcher to support them in the design, conduct and/or dissemination of a research project. This interaction does not need to have been a formal process but any involvement you may had with a researcher during the life of their study. All levels of interaction and experiences will assist us to meet the aim of our study. Therefore, if you meet these criteria, your completion of the survey would be greatly appreciated.

What is required if I take part?

Participation in this study involves completion of an online survey that relates to one research study in which you engaged with a researcher and which was completed in the past three years.

Section A asks for some information about you and your role, section B asks you to provide information on the engagement you experienced, and the remaining sections explore your experiences in alignment with the attributes, antecedents and consequences of ‘Researcher Practitioner Engagement’ which we established in phase 1 of our study.

All questions are closed and require you to select pre-determined responses. There is the option to add comments at the end of the survey should you wish to. The survey should take approximately 30 minutes to complete. You will be asked to provide informed consent prior to completion of the survey to indicate that you agree with the statements detailed in this information sheet.

If you prefer to complete a paper copy of the survey, this can be requested from the research team.

As a practitioner in a health care setting, we would also be grateful if you could forward the link to this survey to any colleagues from the nursing, midwifery, occupational therapy, physiotherapy or speech and language therapy professions that you think may also have engaged with a researcher so we can reach as many practitioners as possible.

What are the possible benefits of taking part?

Whilst there are no immediate benefits it is anticipated that the outcome of this study could have a beneficial impact on future research practices. The findings will be shared with you and the wider health care and research community in order to inform professional practices. Copies of the findings can be obtained from the Principal Investigator on request.

Will my responses be anonymous and confidential?

The survey has been designed to ensure that none of the information you provide can lead to your identification. In addition, the anonymity functions will be used within the survey software (Qualtrics) to ensure your name, email or IP address are NOT collected. You will be asked to provide a unique identification code that will be known only to yourself. Should you decide to withdraw from the study you may contact the research team via a named administrator up until the data analysis process has been completed (*30th September 2019*) quoting this code. The administrator will forward your code to the researcher to enable your completed survey to be withdrawn. The administrator will not provide your email address or any other potential identifying information to the research team so your anonymity to the team is guaranteed throughout the study.

Contact details should you wish to withdraw:
Paul Henry, Academic Excellence Executive Assistant, Institute of Nursing and Health Research
Telephone +44(0)2890366542
Email p.henry@ulster.ac.uk

At the end of the survey, you will be directed to a separate link which allows you to provide a contact email address should you wish to be invited to take part in any subsequent research which emerges from this study and/or would be willing to complete a second brief survey of a similar format in approximately two weeks time. Both are completely optional. The research team will not be able to link this expression of interest to your completed survey and your details will be held securely.

The research team will be unable to make any link between these two surveys to ensure your details cannot be linked to any completed survey. Should you provide your email address, this will be held securely on a password protected University server, for the purposes stated only and removed once the study is complete, in line with the University's General Data Protection Regulation (GDPR) policy (Ulster University 2018). Should you provide any information in your responses that could identify you, your department or organisation, these identifiers will be removed prior to publication as required under Data Protection legislation.

What will happen with the data produced from this survey?

It is our intentions that the findings from both phases of this study will be disseminated in peer reviewed and professional health care publications and at conferences and will ultimately form the lead authors PhD thesis submission.

Who has approved this study?

This study has been reviewed and approved in accordance with the Institute of Nursing and Health Research Governance Filter committee at Ulster University. A copy of this approval can be obtained from the Principal Researcher (see below).

What if there is a problem?

As this study has been carefully planned by the research team and approved by the Institute of Nursing and Health Research Governance Filter Committee at Ulster University, it is extremely unlikely that something will go wrong. However, the university has procedures in place for reporting, investigating, recording and handling adverse events and complaints. Further information on the complaints procedure can be found at the University's "Research Ethics and Governance" webpage (Internet address: https://www.ulster.ac.uk/__data/assets/pdf_file/0011/75638/Complaints.pdf). Any complaint or concerns should be made, in the first instance, to the Chief Investigator for this study (contact details are below).

Complaints will be treated seriously and reported to the appropriate authority.

Who can I contact for further information?

Nikki Daniels (Principal Researcher/PhD Candidate) Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB Email: daniels-n@ulster.ac.uk
Dr. Patricia Gillen (Chief Investigator), Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB p.gillen@ulster.ac.uk
Dr. Karen Casson (Academic Supervisor), Institute of Nursing and Health Research, Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB Email. k.Casson@ulster.ac.uk
Ulster University Research Governance Office
Nick Curry, Head of Research Governance Ulster University, Shore Road, Newtownabbey, Co. Antrim BT37 0QB n.curry@ulster.ac.uk

Reference: Ulster University (2018) ULSTER UNIVERSITY GENERAL DATA PROTECTION REGULATION POLICY Available at https://www.ulster.ac.uk/__data/assets/pdf_file/0006/286008/ulster-university-gdpr-policy.pdf

Version 2 approved by INHR Filter committee May 2019

Appendix 20: Data Collection Tool (Phase 2)

Post CV Introduction

The concept and culture of researcher practitioner engagement in healthcare research in the United Kingdom

An online survey of academic researchers and frontline practitioners

(*nursing, midwifery, physiotherapy, occupational therapy, speech and language therapy*)

There are many ways in which healthcare researchers and frontline practitioners in the United Kingdom work together and many formal cross-organisational systems that have been put in place to enable this to happen. We are particularly interested in if and how academic researchers who are based in or employed by a University, and who do not work within a formal collaborative programme of research, engage with frontline practitioners when they are designing and carrying out a study.

As part of our research, we found examples of various ways in which this happens. We discovered examples which suggested a type of engagement that occurs which enables practitioners to engage in developing the research which is relevant to their practice. However, this type of engagement is not referred to by a consistent name nor does it have a definition to guide those who would like to achieve this type of engagement.

We have called this 'Researcher Practitioner Engagement' (RPE); with academic researchers and practitioners who have experience of this type of engagement, we have identified the attributes (necessary characteristics), antecedents (necessary precursors) and consequences (outcomes) of RPE.

This survey is the next stage of our research. Our aim is to establish if the experiences of academic researchers and frontline practitioners can be defined as RPE by identifying if those who have engaged in this process experienced its defining characteristics and any of its potential outcomes. The results of this survey will identify areas for further development of the concept of Researcher Practitioner Engagement both in practice and for future research.

We would like to hear about your experiences if you are:
a) an academic researcher employed wholly by a University in the United Kingdom (UK) or carrying out doctoral level studies at a UK University

and

have engaged with a nurse, midwife, physiotherapist, occupational therapist and/or speech and language therapist, in a role other than as a participant, in a study during the last three years

OR, if you are:

b) a nurse, midwife, physiotherapist, occupational therapist or speech and language therapist who delivers direct care to patients within a healthcare organisation

and

have been engaged by an academic researcher from a UK University in a study, in a role other than as a participant, during the last three years

Please click on 'Continue' if you meet either of these criteria and you would be willing to take part in this short survey.

Information for participants

Thank you for agreeing to share your experiences.

Before we start, here is some important information about the survey:

- it should take no longer than 25 minutes to complete
- your participation is voluntary
- you will not be required to provide any information which could identify you

- all questions in the survey are closed, so you will be asked to select from pre-determined responses. If there are any additional comments that you would like to add which would enhance our understanding of your experience, then these can be added in a comment box on the last page of the survey

Below you will find a Participant Information Sheet (PIS) which provides greater detail on the study and outlines how we will ensure confidentiality, anonymity and the procedure to follow should you choose to withdraw your data after you have completed the survey.

Please read the PIS which applies to you and then click 'Continue' if you consent to taking part in this survey.

(The PIS should open in a separate window so please return to this window to continue with the survey)

If you should experience any difficulties completing this survey or have any further questions before you consent to taking part, please email the Principal Investigator Nikki Daniels **(daniels-n@ulster.ac.uk)**

Please complete all questions you see until the end of survey message appears to ensure your responses are recorded.

Participant Information Sheet: Academic Researchers

Participant Information Sheet: Practitioners

Please generate a unique identification code by adding the requested details below.

First letter of your first name	
The day and month you were born (e.g 1402)	
House number	

SURVEY Section A: You and your role

SECTION A: About you and your role

To direct you to the most appropriate set of questions, please choose from the following options to indicate if you will be completing this survey from the perspective of an academic researcher or a practitioner:

I am a healthcare researcher wholly employed by a Higher Education Institute in the United Kingdom or a doctoral researcher enrolled at a Higher Education Institute in the United Kingdom

I am a practitioner (nurse, midwife, occupational therapist, physiotherapist or speech and language therapist) employed by a healthcare provider in the United Kingdom in a role which involves providing direct care to patients or service users

Neither of the above apply to me
(if you select this option you will be directed to the end of the survey as you do not meet the study criteria)

I am a:

Nurse

Midwife

Physiotherapist

Occupational therapist

Speech and language therapist

Which best describes your role?

PhD/Doctoral Researcher (full time)

PhD/Doctoral Researcher (part time)

Research fellow or research associate

Reader or Lecturer with research responsibilities

Clinical academic

Professor or Associate Professor

Other

Which best describes your role?

Practitioner whose main responsibility is delivering patient care

Practitioner whose main responsibility is leadership

Clinical academic

Research nurse, Research midwife or Research therapist

Other (please state)

Please indicate the highest level of academic qualification you have been awarded:

Diploma level

BSc/Bsc(Hons)

Postgraduate certificate

Postgraduate diploma

Master's level (e.g MSc, MA)

PhD/Doctorate

Which best describes where you are based?

My work space/office is based wholly in a University setting
My work space/office is based wholly in a clinical setting
My work space/office is shared across a clinical setting and University setting
Other (please state)

My work base is in:

▾

SURVEY Your engagement experience (Practitioners)

SECTION B: Your experience of engaging with an academic researcher

In this section, we would like to establish your experiences of working with an academic researcher from a UK University in any element of a research project, other than as a research participant. So for example, supporting research activities such as a study protocol design, recruitment, data collection, intervention design or delivery, data analysis, dissemination or implementation.

Please select from the options below the statement which best reflects your experience **over the past 3 years:**

I have been engaged by an academic researcher from a UK University in one or more studies.
Please indicate the number of studies in which you have engaged with a researcher **in the past 3 years**:
I have **not** been engaged by an academic researcher from a UK University to support a study **in the past 3 years**

We would like you to answer the remainder of the questions in this survey in relation to just **one study**.

If you have experience of engaging in more than one study, please base your responses on your experience of a study which is completed or most near to completion.

Please indicate how engagement was initiated on this study:

The academic researcher approached me or someone within my organisation to engage me in their study

I, or someone in my organisation, approached the academic researcher to support a study initiated in my practice

How did the academic researcher approach you about this study?

Existing relationship from a previous study

At a professional conference

Contacted via my professional body

I responded to an advertisement

I was recommended to the researcher by a colleague

Via an R&D representative within my organisation

Via social media (for example Twitter, Linked-In, Researchgate, Facebook)

Other ☐

We understand that sometimes there may be a link person between front-line practitioners and an academic researcher(s). Please indicate which statement relates to your experience:

My interactions were predominately directly with the researcher(s)

My interactions were predominately with a link person between myself and the researcher(s)

If you have selected this option please describe the role/job title of the link person in the box below:

Please indicate the stage(s) of the research process in which you were engaged with or by an academic researcher in this study. Select ALL which apply:

Identification of research topic

Prioritisation of research topics

Obtaining funding for the study

Developing the research protocol

Carrying out a review of existing evidence

Making decisions on the method such as sample sizes, inclusion criteria, which data to collect and how

Designing the study intervention

Obtaining governance and/or ethical approval

Recruiting participants to the study

Delivering the study intervention

Collecting data

Analysis and/or interpretation of data

Report writing

Dissemination of findings

Implementation of findings

Other (please state)

Please indicate below if this study is now completed or is ongoing. If not yet complete, please indicate the current stage of the study:

	Is this study complete or ongoing?			Stage of ongoing study						
	Completed	Ongoing	I don't know	N/A	I don't know	Preparing for dissemination	Data analysis	Data collection	Recruitment	Planning
Study status	○	○	○	○	○	○	○	○	○	○

To the best of your knowledge, was this study carried out as part of a formal partnership arrangement between a healthcare provider and a University, for example within a CLAHRC?

If you wish to provide any further detail on partnership arrangements, please use the box below.

Yes

No

I don't know

If you wish to provide any further detail on partnership arrangements, please use the box below.

SURVEY Attributes (Practitioners)

SECTION C: Attributes, antecedents and consequences of researcher practitioner engagement

As outlined in the introduction, we have developed the concept 'Researcher Practitioner Engagement' (RPE) and with researchers and practitioners who have experience of this type of engagement, we have identified the attributes (necessary characteristics), antecedents (necessary precursors) and

consequences (outcomes) of RPE.

In the previous section, you provided us with some information about the research activities in which you engaged with an academic researcher. In this next section we would like to explore if your experience aligns with researcher practitioner engagement and its defining attributes, antecedents and consequences.

Attribute: Varies in level and type dependent on study design (engagement in formative stage)

We found that an important element of Researcher Practitioner Engagement is that practitioner's clinical perspectives are considered in the design of the study protocol.

Please select the statement which best reflects the design of the study protocol for the study in which you engaged:

My clinical perspectives were sought by the researcher before and/or during the design of the research protocol

My clinical perspectives were not sought before or during the design of the research protocol but the researchers obtained a clinical perspective from a different practitioner or clinical team

To the best of my knowledge, the researcher did not seek the clinical perspectives of a practitioner when designing the research protocol

My clinical perspectives were not sought before or during the design of the research protocol but changes had to be made to the protocol later in the study which were informed by my or my practitioner colleague's clinical perspectives

None of the above

Attribute: Values the clinical perspectives, knowledge and/or skills of a practitioner (influences the research process)

We found that an important element of Researcher Practitioner Engagement is that the clinical perspectives of practitioners are valued in a study. One indicator of this is that practitioner's clinical perspectives are used to influence how a study is designed and/or carried out.

Please rate the following statements below in relation to if and how you think your clinical perspectives influenced this study:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
My clinical perspectives, knowledge and/or skills informed or influenced the design of the study protocol	○	○	○	○	○
The stage at which I was engaged in the study meant it was too late for my clinical perspectives, knowledge and/or skills to inform or influence the study protocol	○	○	○	○	○
My clinical perspectives, knowledge and/or skills informed or influenced research activities while the study was being carried out	○	○	○	○	○

Attribute: Values the clinical perspectives, knowledge and/or skills of a practitioner (equitable to researcher's perspectives)

We found that an important element of Researcher Practitioner Engagement is that when designing and carrying out a study, practitioner's clinical perspectives are equitable to a researchers perspective's. This does not mean that each parties' perspectives are equal at all times, but that the clinical perspectives of practitioners influence the research when required to do so.

In the stages of this study in which you were engaged by the researcher, please tell us to what extent you perceive your clinical perspectives were equitable to the researchers:

	All of the time	Most of the time	Some of the time	Never	Unsure
During this study, my clinical perspectives were equitable to the researcher's perspectives	○	○	○	○	○

Attribute: Mutually beneficial

We found that Researcher Practitioner Engagement is a process that both practitioners and researchers should benefit from. The benefits which a practitioner experiences do not need to be specific and could relate to professional development, an improvement in practice or a benefit to patients.

The benefits which a researcher experiences can also relate to their own professional development or a benefit relating to the design or conduct of the study.

Please use the scale below to tell us if you think you benefited from engaging in this study:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
In general, I found engaging in this study beneficial	○	○	○	○	○
I perceived that my engagement in this study was beneficial for the researcher	○	○	○	○	○
I don't think I gained any benefit from engaging in this study	○	○	○	○	○

Attribute: Clinically informed problem solving

We found that an important element of Researcher Practitioner Engagement is that practitioners are involved in problem solving with the researcher(s).

By problem solving we mean identifying a problem, analysing the problem and negotiating potential solutions. This could relate to ***any*** *activity within the research process and could include for example, scheduling of intervention delivery or improving recruitment activities.*

Please select the most appropriate response for each of the statements in relation to the study you engaged in:

	Always	Most of the time	Some of the time	Never	Unsure
If problems arose during the study, the researcher and I and/or my colleague(s) problem solved together using our respective clinical and research knowledge	○	○	○	○	○
If problems arose during the study, the researcher solved the problem without practitioner input	○	○	○	○	○
If problems arose during the study, I and/or my colleague(s) solved the problem without researcher input	○	○	○	○	○

Attribute: Clinically informed decision making

We found that an important element of Researcher Practitioner Engagement is that practitioners are involved in making decisions in relation to aspects of the study.

By decision making we mean selecting a course of action from alternative courses of action. This could relate to ***any*** *activity within the research process and could include decisions which influence the study protocol and how the study was carried out or more local decisions, for example when to schedule intervention delivery or data collection or how to recruit participants.*

Please select the most appropriate response for each of the statements in relation to the study you engaged in:

	Always	Most of the time	Some of the time	Never	Unsure
If decisions needed to be made during the course of the study, the researcher and I made these decisions together using our respective clinical and research knowledge	○	○	○	○	○

	Always	Most of the time	Some of the time	Never	Unsure
The researcher made decisions during the study without seeking my clinical perspective	○	○	○	○	○
I made decisions during the study without seeking input from the researcher	○	○	○	○	○
When decisions needed to be made during the course of the study, they were made by the party with the most relevant skills (i.e the practitioner or the researcher)	○	○	○	○	○

Open dialogue

We found that an important element of Researcher Practitioner Engagement is that practitioners and researcher(s) maintain an open dialogue. By open dialogue we mean two way communications which facilitate attributes such as problem solving and decision making.

Please rate the following statements in relation to the communication between yourself and the researcher(s) during this study:

	Always	Most of the time	Some of the time	Never	Unsure	I had no direct communication with the researcher(s)
I was encouraged to contact the researcher(s) at any point with concerns or questions in relation to study activities	○	○	○	○	○	○
I felt comfortable contacting the researcher(s) when I had concerns or questions in relation to the study	○	○	○	○	○	○
I did not feel comfortable contacting the researcher(s) outside of scheduled meetings	○	○	○	○	○	○

	Always	Most of the time	Some of the time	Never	Unsure	I had no direct communication with the researcher(s)
The researcher(s) was accessible throughout the study	○	○	○	○	○	○
The researcher(s) had a presence in the clinical environment during the study	○	○	○	○	○	○

SURVEY Antecedents (Practitioner)

Researchers and practitioners have identified a number of factors that need to be in place before Researcher Practitioner Engagement can occur. The following questions ask you to provide information relating to your experiences and each of these factors.

Antecedent: Common vested interest in the study topic and its outcomes

We found that having a common vested interest in a study and its outcomes is an important pre-cursor to Researcher Practitioner Engagement. One indicator of this is practitioner's ability to see the benefit of a study for their patients.

Please select the statement which best represents how you viewed the benefit of this study for your patients:

The clear benefit of this study for my patients/service was what motivated me to engage in this study

I did not see the benefits for my patients/service at the beginning, but this developed as the study progressed

I did not see the benefit of this research for my patients/service until the end of the study

I did not see the benefit of this research for my patients/service at any point during the study

Antecedent: Common vested interest in the study topic and its outcomes

Please let us know if the study topic was meaningful to your practice:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The study topic was meaningful to my clinical practice	○	○	○	○	○

Antecedent: Common vested interest in the study topic and its outcomes

Please indicate if you think yourself and the researcher had the same understanding of the purpose of the study and its outcomes:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The researcher(s) and I had the same understanding of the purpose of the study	○	○	○	○	○

Antecedent: Initiating and forming a relationship

We found that initiating and forming a relationship is an important pre-cursor to Researcher Practitioner Engagement.

Please select the statement which best reflects the relationship you had with the academic researcher at the point which you began to engage on this study:

The researcher and I had already developed a relationship from working on a previous study together

The researcher and I spent time developing a relationship before we started working on this study together

The researcher and I developed a relationship whilst working on this study

The researcher and I already had an established relationship from working together previously (but not in a research related capacity)

I had no direct contact with the researcher(s) so we did not develop a relationship

None of the above

Antecedent: Organisational culture of research integration

We found that a culture of research integration in the practitioner's organisation is an important pre-cursor to Researcher Practitioner Engagement.

In relation to the study in which you engaged, please rate the following statements:

	Definitely true	Somewhat true	Neither true nor false	Not true	Definitely not true
My organisation has a strong research culture	○	○	○	○	○
Support from my organisation facilitated my engagement in this research	○	○	○	○	○
Support from my manager facilitated my engagement in this research	○	○	○	○	○
Support from my peers facilitated my engagement in this research	○	○	○	○	○
Lack of support from my organisation limited my engagement in this research	○	○	○	○	○
Lack of support from my manager limited my engagement in this research	○	○	○	○	○
Lack of support from my peers limited my engagement in this research	○	○	○	○	○

Antecedent: Consideration of the clinical setting

We found that consideration of factors within the clinical context in which a study will take place is important prior to Researcher Practitioner Engagement.

In relation to the study in which you engaged, please rate the following statements:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The researcher had an understanding of the demands of the clinical setting and how these might impact on my engagement in the study	○	○	○	○	○
Challenges in the clinical setting limited my engagement in this study	○	○	○	○	○
Greater consideration of the challenges within the clinical setting at the beginning of the study could have enhanced my ability to engage in this study	○	○	○	○	○
The researcher spent time in the clinical setting before and/or during the study to observe the clinical context	○	○	○	○	○

Antecedent: Practitioner's time

We found that having dedicated time to engage in research is an important pre-cursor to Researcher Practitioner Engagement.

In relation to the study in which you engaged, please rate the following statements:

	Definitely true	Somewhat true	Neither true nor false	Not true	Definitely not true
I was allocated time within my workload to engage in this study	○	○	○	○	○
I was seconded from my clinical role to engage in this study	○	○	○	○	○

	Definitely true	Somewhat true	Neither true nor false	Not true	Definitely not true
I used some of my own personal time outside of usual working hours to engage in the study	○	○	○	○	○
I used more of my own personal time than work time to engage in this study	○	○	○	○	○
Backfill money was used to cover some of my duties to enable me to engage in this research	○	○	○	○	○
Backfill money was available to enable me to engage in this study but personnel were not available to cover my duties	○	○	○	○	○
Research activities related to this study became part of my clinical workload	○	○	○	○	○
Engaging in this study felt like something extra I had to do on top of my usual workload	○	○	○	○	○
Research activities generally are integral to my role	○	○	○	○	○

SURVEY Consequences (Practitioners)

Researchers and practitioners have identified a number of benefits of Researcher Practitioner Engagement. The following questions ask you to identify if you experienced any of these benefits as a result of your engagement in this study.

Consequence: Individual Research Capacity Building (Dissemination Skills)

Firstly, development of dissemination skills is seen as a benefit of Researcher Practitioner Engagement. Please identify if this was a benefit which you experienced:

	True	False	I was unable to accept an opportunity offered
I gained experience as a co-author on a formal publication (for example a journal article or a report to a funding body or similar)	○	○	○
I presented the findings of the study at a local event (for example, an event within your organisation, the researcher's organisation, a local stakeholder meeting)	○	○	○
I presented the findings of the study at a national event (for example, a national conference or professional body meeting)	○	○	○
I presented the findings of the study at an international event (for example an international conference)	○	○	○
I did not develop any dissemination skills as part of this study	○	○	○
I developed other dissemination skills through other dissemination activities as part of this study (Please provide details in the box below) ☐	○	○	○

Consequence: Individual Research Capacity Building (Research awareness and understanding)

Developing awareness and understanding of research is a benefit of Researcher Practitioner Engagement. Please rate the following statements to help us to identify if this was a benefit which you experienced.

Engaging in this study enabled me to:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Develop my awareness of how research informs clinical practice	○	○	○	○	○

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Develop my understanding of research generally	○	○	○	○	○
Develop specific research skills	○	○	○	○	○
Improve my ability to source research evidence relevant to my clinical area	○	○	○	○	○
Improve my ability to evaluate published research	○	○	○	○	○
Improve my ability to apply research evidence in my clinical practice	○	○	○	○	○

Consequence: Individual Research Capacity Building (Future research activity)

Engaging in subsequent research activities is an outcome of Researcher Practitioner Engagement. Please rate the following statements to help us to identify if this was an outcome which you experienced.

Engaging in this study has:

	Definitely true	Somewhat true	Neither true nor false	Not true	Definitely not true
Motivated me to engage in a subsequent study (presently or in the future)	○	○	○	○	○
Motivated me to carry out my own research (presently or in the future)	○	○	○	○	○
Motivated me to enrol in postgraduate study (presently or in the future)	○	○	○	○	○

	Definitely true	Somewhat true	Neither true nor false	Not true	Definitely not true
Discouraged me from engaging in future studies	○	○	○	○	○

Consequence: Individual Research Capacity Building (Professional development)

Researcher Practitioner Engagement can contribute to a practitioner's professional development.
Please rate the following statements to help us to identify if engaging in this study contributed to these aspects of your professional development.

Engaging in this study helped me to:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Reflect on elements of my clinical practice	○	○	○	○	○
Gain new knowledge in relation to my clinical area	○	○	○	○	○
Make a contribution to development of new knowledge in my clinical area	○	○	○	○	○
Become more questioning of elements of my clinical practice	○	○	○	○	○
Demonstrate professional development as part of validation or professional registration process	○	○	○	○	○
Be more confident in my clinical role	○	○	○	○	○
Keep up to date with wider researcher evidence in my clinical area	○	○	○	○	○
Develop as an evidence based practitioner	○	○	○	○	○

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Feel like an expert in my clinical area	○	○	○	○	○
Other (please state in the box below) ☐	○	○	○	○	○

Consequence: Practice Development

Researcher Practitioner Engagement can contribute to practice development.

Please rate the following statements to help us to identify if engaging in this study contributed to development of your practice.

Engaging in this study has:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Developed my understanding of a clinical condition	○	○	○	○	○
Developed my understanding of an intervention or assessment	○	○	○	○	○
Increased my confidence in my role as a practitioner	○	○	○	○	○
Contributed towards developing expertise in my field	○	○	○	○	○
Confirmed the suitability of the care already provided	○	○	○	○	○
Allowed me to make changes to elements of my clinical practice	○	○	○	○	○
Allowed me to improve my clinical practice	○	○	○	○	○

Consequence: Individual Research Capacity Building (Team/department development)

Researcher Practitioner Engagement can contribute to the development of practitioner's team.

Please rate the following statements to help us to identify if engaging in this study contributed to the development of your colleagues:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Observing my experiences encouraged colleagues to engage in a subsequent study	○	○	○	○	○
Engagement is this study contributed to developing a research culture within the team/department	○	○	○	○	○
Engagement is this study contributed to developing a research culture that could attract others to work in the team	○	○	○	○	○
I shared my learning from this study with colleagues	○	○	○	○	○
Following my engagement in this study, use of research evidence in practice improved generally within the team/department	○	○	○	○	○
Educational workshops were offered by the researcher to myself and my colleagues	○	○	○	○	○
Engagement in this study gained recognition for my team/department	○	○	○	○	○

Consequence: Improved clinical relevance of a study and its outcomes

Based on your experience, do you think that your engagement as a practitioner in this study had a positive influence on any of the following aspects of the study:

	Yes	To some extent	No	I don't know	Not relevant to this study
Content of the study protocol	○	○	○	○	○
Study funding	○	○	○	○	○
Gaining study approvals (Eg ethics or Trust approvals)	○	○	○	○	○
Participant documentation (e.g Participant information sheet)	○	○	○	○	○
Feasibility of the study	○	○	○	○	○
Identifying appropriate participants	○	○	○	○	○
Recruiting participants to the study	○	○	○	○	○
Design of the study intervention	○	○	○	○	○
Delivery of the study intervention (e.g scheduling)	○	○	○	○	○
Choice of outcome measures	○	○	○	○	○
Data collection tool (e.g survey, interview schedule)	○	○	○	○	○
Data collection process	○	○	○	○	○
Analysis and interpretation of the findings	○	○	○	○	○
Overall outcome of the study	○	○	○	○	○
Dissemination of the study	○	○	○	○	○
Use of the study findings in clinical practice	○	○	○	○	○

	Yes	To some extent	No	I don't know	Not relevant to this study
Relevance of the study findings to clinical practice	○	○	○	○	○

Measurement of the outcomes of Researcher Practitioner Engagement

We are interested to know if you have recorded or measured any of the benefits you may have experienced from engaging in this study. Please indicate below if and how any of the consequences you experienced were measured or recorded:

	Not recorded or measured	Reflective notes	Carried out additional work to evaluate this	Use of a dedicated tool	Detailed in a report to funders (or similar)	Through formal education (e.g postgraduate module)	Annual appraisal	Professional registration/validation (e.g NMC or HCPC)	Other
Contribution to my professional development	○	○	○	○	○	○	○	○	○
Impact on my clinical practice	○	○	○	○	○	○	○	○	○
Impact on the development of my service	○	○	○	○	○	○	○	○	○
Benefit to my patients	○	○	○	○	○	○	○	○	○
Influence of your involvement on any of the research activities (as listed in the previous question e.g protocol, recruitment, data collection tool etc)	○	○	○	○	○	○	○	○	○

Please provide details of any additional consequences you may have experienced and/or additional methods used to record or measure any of the benefits experienced that have not already been identified:

☐

Finally,

	Yes	To some extent	No	I don't know
Did you feel any ownership of this study?	○	○	○	○
Do you feel you added any value to this study?	○	○	○	○
Did you feel your contribution to this study was equitable to the researchers?	○	○	○	○
Do you feel your role in this study was defined from the early stages?	○	○	○	○
Did the level of commitment required for this study exceed your initial expectations?	○	○	○	○
Did you feel like a member of the research team?	○	○	○	○
At any point, did you feel like you were "being used" by the researcher?	○	○	○	○
Did any finding from this study inform a subsequent decision or action in any element of your practice?	○	○	○	○
Do you think your role in this study helped you to contribute to producing knowledge that could inform clinical practice?	○	○	○	○

SURVEY Your engagement experience (Researchers)

SECTION B: Your experience of engaging with practitioners

In this section, we would like to establish if and how you have engaged a frontline practitioner (*nurse, midwife, occupational therapist, physiotherapist or speech and language therapist*) in any element of a study, other than as a research participant. So for example, supporting one or more research activities such as a study protocol design, recruitment, data collection, intervention design or delivery, data analysis, dissemination or implementation.

We are particularly interested in recent experiences from the **past 3 years**.

Please select the statement which best reflects your experience:

I have engaged a frontline practitioner(s) in one study or more in the past 3 years.

☐ **Please enter the number of studies in which you have engaged with a practitioner in the past 3 years in the box provided:**

I have not engaged a frontline practitioner(s) in a study in a role other than as a participant

For the remainder of the survey, we would like you to respond to our questions in relation to just **one study** in which you have engaged with a practitioner from one of the stated disciplines in the past three years.

If you have engaged with a practitioner(s) in more than one study during this time, please answer the questions in relation to the most recently completed study or the study nearest to completion.

We appreciate that you may have engaged with more than one practitioner during this study. Therefore, please select **the practitioner with whom you believe you had the greatest level of engagement** and answer the remaining questions in relation to your engagement with that practitioner.

Please indicate how engagement was initiated on this study:

I approached the practitioner or someone in their organisation to support this study

The practitioner, or someone in their organisation, approached me or someone within my organisation with the research idea or to support the study in their clinical area

How did you approach the practitioner about this study?

Existing relationship from a previous study

At a professional conference

Contacted via a professional body

They responded to an advertisement

They were recommended by a colleague

Via an R&D representative within their organisation

Via social media (e.g. Twitter, LinkedIn, Researchgate, Facebook)

Other ______________________

Please identify which discipline was represented by the practitioner you engaged with:

Nursing

Midwifery

Occupational therapy

Physiotherapy

Speech and language therapy

Please indicate the stage(s) of the research process in which you engaged the practitioner in this study: (select ALL which apply)

Identification of research topic

Prioritisation of research topics

Obtaining funding for the study

Developing the research protocol

Carrying out a review of existing evidence

Making decisions on the method such as sample size, inclusion criteria, which data to collect and how

Designing the study intervention

Obtaining governance and/or ethical approval

Recruiting participants to the study

Delivering the study intervention

Collecting data

Analysis and/or interpretation of data

Report writing

Dissemination of findings

Implementation of findings

Other (please state)

Please indicate below if this study is now completed or is ongoing. If not yet complete, please indicate the current stage of the study:

	Study status			Stage of ongoing study						
	Complete	Ongoing	I don't know	N/A	I don't know	Preparing for dissemination	Data analysis	Data collection	Recruitment	Planning

	Study status			Stage of ongoing study						
	Complete	Ongoing	I don't know	N/A	I don't know	Preparing for dissemination	Data analysis	Data collection	Recruitment	Planning
Study status	○	○	○	○	○	○	○	○	○	○

We understand that sometimes there may be a link person between frontline practitioners and an academic researcher(s). Please indicate which statement relates to your experience:

My interactions were predominately directly with the frontline practitioner

My interactions were predominately with a link person between myself and the frontline practitioner

If you have selected this option please describe the role/job title of the link person in the box below:

Please indicate if any elements of the following theoretical approaches were **formally/explicitly** used to guide engagement with practitioners in this study:

No theoretical guidance was explicitly used

Participatory Action Research

Integrated Knowledge Translation (IKT)

Community Based Participatory Research

Engaged Scholarship

Co-production (please provide further detail)

Collaborative research (please provide further detail)

Other (please provide further detail)

I don't know

To the best of your knowledge, was this study carried out as part of a formal partnership arrangement between a healthcare provider and a University, for example within a CLAHRC?

If you wish to provide any further detail on partnership arrangements, please use the box below.

Yes
No
I don't know

If you wish to provide any further detail on partnership arrangements, please use the box below.

☐

SURVEY Attributes (Researchers)

SECTION C: Attributes, antecedents and consequences of researcher practitioner engagement

As outlined in the introduction, we have developed the concept 'Researcher Practitioner Engagement' (RPE) and with researchers and practitioners who have experience of this type of engagement, we have identified the attributes (necessary characteristics), antecedents (necessary precursors) and consequences (outcomes) of RPE.

In the previous section, you provided us with some information about the research activities in which you engaged with a frontline practitioner. In this next section we would like to explore if your experience aligns with researcher practitioner engagement and its defining attributes, antecedents and consequences.

Remember, each question should be answered in relation to the practitioner which you believe you had the greatest level of engagement.

Attribute: Varies in level and type dependent on study design (engagement in formative stage)

We found that an important element of Researcher Practitioner Engagement is that practitioner's clinical perspectives are considered in the design of the study protocol.

Please select the statement which best reflects the design of the study protocol for this study:

The clinical perspectives, knowledge and/or skills of the practitioner with whom I engaged on subsequent study activities were sought before the research protocol was written

The clinical perspectives, knowledge and/or skills of practitioner(s) were sought before the research protocol was written, however this did not include the practitioner(s) with whom I/we engaged in subsequent study activities (for example recruitment, data collection)

The clinical perspectives of any practitioner were not sought before the research protocol was written

None of the above

Attribute: Values the clinical perspectives, knowledge and/or skills of a practitioner (influences the research process)

We found that an important element of Researcher Practitioner Engagement is that the clinical perspectives of practitioners are valued in a study. One indicator of this is that their clinical perspectives are used to influence how a study is designed and/or carried out.

Please rate the following statements below in relation to if and how clinical perspectives influenced this study:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The practitioner's clinical perspectives, knowledge and/or skills informed or influenced the design of the study protocol	○	○	○	○	○

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The stage at which the practitioner was engaged in the study meant it was too late for their clinical perspectives, knowledge and/or skills to inform the study protocol	○	○	○	○	○
The practitioner's clinical perspectives, knowledge and/or skills led to changes to the protocol during the course of the study	○	○	○	○	○
The practitioner's clinical perspectives, knowledge and/or skills informed or influenced research activities during the course of the study	○	○	○	○	○
I have a clinical background so the practitioner's clinical perspectives, knowledge and/or skills were not always required in this study	○	○	○	○	○

Attribute: Values the clinical perspectives, knowledge and/or skills of a practitioner (equitable to researcher's perspectives)

We found that an important element of Researcher Practitioner Engagement is that when designing and carrying out a study, practitioner's clinical perspectives are equitable to a researchers perspectives. This does not mean that each parties' perspectives are equal at all times, but that the clinical perspectives of practitioners influence the research when required to do so.

In the stages of this study in which you engaged with this practitioner, please tell us to what extent you perceive the practitioner's clinical perspectives were equitable to the researcher's perspectives:

	All of the time	Most of the time	Some of the time	Never	Unsure
Practitioner's clinical perspectives were equitable to the researcher's perspectives	○	○	○	○	○

Attribute: Mutually beneficial

We found that Researcher Practitioner Engagement is a process that both practitioners and researchers should benefit from. The benefits which a researcher experiences do not need to be specific and could relate to factors such as their own professional development, an improvement in their own research practice or a benefit relating to the design or conduct of the study. Practitioners too can experience benefits relating to professional or practice development.

Please use the scale below to tell us if you think you and/or the practitioner benefited from their engagement in this study:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
In general, I found engaging a practitioner in this study was beneficial for me and/or the study	○	○	○	○	○
I perceived that engaging in this study was beneficial for the practitioner	○	○	○	○	○
I did not find engaging a practitioner in this study beneficial	○	○	○	○	○

Attribute: Clinically informed problem solving

We found that an important element of Researcher Practitioner Engagement is that practitioners are involved in problem solving with the researcher(s).

By problem solving we mean identifying a problem, analysing the problem and negotiating potential solutions. This could relate to ***any*** *activity within the research process and could include for example, scheduling of intervention delivery, data collection or recruitment activities*

Please select the most appropriate response for each of the statements in relation to this study:

	Always	Most of the time	Some of the time	Never	Unsure
If problems arose during the study, the practitioner and I problem solved together using our respective clinical and research knowledge	○	○	○	○	○

	Always	Most of the time	Some of the time	Never	Unsure
The practitioner addressed problems that arose during the study without seeking my research perspective	○	○	○	○	○
I problem solved issues that arose during the study without seeking input from the practitioner	○	○	○	○	○

Attribute: Clinically informed decision making

We found that an important element of Researcher Practitioner Engagement is that practitioners are involved in making decisions in relation to aspects of the study.

By decision making we mean selecting a course of action from alternative courses of action. This could relate to ***any*** *activity within the research process and could include decisions which influence the study protocol and how the study was carried out or more local decisions, for example when to schedule intervention delivery or data collection or how to recruit participants.*

Please select the most appropriate response for each of the statements in relation to this study:

	Always	Most of the time	Some of the time	Never	Unsure
If decisions needed to be made during the course of the study, the practitioner and I made these decisions together using our respective clinical and research knowledge	○	○	○	○	○
The practitioner made decisions during the study without seeking my research perspective	○	○	○	○	○
I made decisions during the study without seeking input from the practitioner	○	○	○	○	○

	Always	Most of the time	Some of the time	Never	Unsure
When decisions needed to be made during the course of the study, they were made by the party with the most relevant skills (i.e the practitioner or the researcher)	○	○	○	○	○

Open dialogue

We found that an important element of Researcher Practitioner Engagement is that practitioners and researcher(s) maintain an open dialogue. By open dialogue we mean two way communications which facilitate attributes such as problem solving and decision making.

Please rate the following statements in relation to communication with the practitioner(s) during this study:

	Always	Most of the time	Some of the time	Never	Unsure	I had no direct communication with the practitioner(s)
I encouraged the practitioner to contact me at any point with concerns or questions in relation to study activities	○	○	○	○	○	○
The practitioner contacted me with my concerns or questions during the study	○	○	○	○	○	○
The practitioner was accessible throughout the study	○	○	○	○	○	○
I maintained a presence in the clinical environment during the study	○	○	○	○	○	○

SURVEY Antecedents (Researchers)

Researchers and practitioners have identified a number of factors that need to be in place before Researcher Practitioner Engagement can occur. The following questions ask you to provide information relating to your experiences relating to each of these factors.

Antecedent: Common vested interest in the study topic and its outcomes

We found that having a common vested interest in the study topic and its outcomes is an important pre-cursor to Researcher Practitioner Engagement. An indicator of this was found to be the practitioner's ability to see the benefit of the study for their patients.

Please select the statement which you think best represents how the practitioner viewed the benefits of this study for their patients and/or service:

The clear benefit of this study for their patients/service motivated the practitioner to engage in this study
The practitioner could see benefits of this study for their patients/service from the early stages of their engagement
The practitioner did not see benefits for their patients/service at the beginning, but this developed as the study progressed
The practitioner did not see benefits of this research for their patients/service until the end of the study
The practitioner did not see benefits of this research for their patients/service at any point during the study
I am not aware of the practitioner's views on the benefits of this study for their patients/service

Antecedent: Common vested interest in the study topic and its outcomes

If you can, please indicate if you believe the study topic was meaningful to the practitioner's clinical practice:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The research question was meaningful to the practitioner's clinical practice	○	○	○	○	○

Antecedent: Common vested interest in the study topic and its outcomes

Please indicate if you think yourself and the researcher had the same understanding of the purpose of the study and its outcomes:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The practitioner and I had the same understanding of the purpose of the study	○	○	○	○	○

Antecedent: Initiating and forming a relationship

We found that initiating and forming a relationship is an important pre-cursor to Researcher Practitioner Engagement.

Please select the statement which best reflects the relationship you had with the practitioner at the point which you engaged them in this study:

The practitioner and I had already developed a relationship from working on a study together previously

The practitioner and I spent time developing a relationship before we started working on this study together

The practitioner and I developed a relationship whilst working on this study

The practitioner and I already had an established relationship from working together previously (but not in a research related capacity)

I did not have any direct contact with the practitioner during this study so did not build a relationship

None of the above

Antecedent: Organisational culture of research integration

We found that a culture of research integration in the practitioner's organisation is an important pre-cursor to Researcher Practitioner Engagement.

In relation to the study, please rate the following statements:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The practitioner's organisation has a strong research culture	○	○	○	○	○
Support from the practitioner's organisation facilitated their engagement in this study	○	○	○	○	○
Support from the practitioner's manager facilitated their engagement in this study	○	○	○	○	○
Support from the practitioner's peers facilitated their engagement in this study	○	○	○	○	○
Lack of support from the practitioner's organisation limited their engagement in this study	○	○	○	○	○
Lack of support from the practitioner's manager limited their engagement in this study	○	○	○	○	○
Lack of support from the practitioner's peers limited their engagement in this study	○	○	○	○	○

Antecedent: Consideration of the clinical setting

We found that consideration of factors within the clinical setting in which a study will take place is important prior to Researcher Practitioner Engagement.

In relation to this study, please rate the following statements:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
I had an understanding of the demands of the clinical setting and how these might impact on the practitioner's engagement in the study	○	○	○	○	○

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Adjustments were made to the study protocol to overcome factors within the clinical environment that could have affected practitioner engagement in this study	○	○	○	○	○
Challenges within the clinical setting limited the practitioner's ability to engage with this study	○	○	○	○	○
Greater consideration of potential challenges within the clinical setting at the beginning of the study could have enhanced the practitioner's ability to engage in this study	○	○	○	○	○
I spent time in the practitioner's clinical setting to gain an understanding of the clinical context	○	○	○	○	○

Practitioner's time

We found that having dedicated time to engage in research is an important factor in Researcher Practitioner Engagement.

In relation to this study, please rate the following statements where you are able:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The practitioner was allocated time within their workload to engage in this study	○	○	○	○	○
The practitioner was seconded from their clinical role to engage in this study	○	○	○	○	○

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
The practitioner used some of their own personal time outside of usual working hours to engage in the study	○	○	○	○	○
Backfill money was used to cover some of the practitioner's clinical duties to enable them to engage in this research	○	○	○	○	○
Backfill money was available to enable the practitioner to engage in this study but personnel were not available to cover their duties	○	○	○	○	○

SURVEY Consequences (Researchers)

Researchers and practitioners have identified a number of benefits of Researcher Practitioner Engagement.

The following questions ask you to identify if you have experienced any of these benefits as a result of practitioner engagement in this study, or are aware of benefits experienced by the practitioner.

Consequence: Individual Research Capacity Building (Practitioner's dissemination skills)

Firstly, development of a practitioner's dissemination skills is seen as a benefit of Researcher Practitioner Engagement. Please rate the following statements to help us to identify if this was a benefit they experienced:

	True	False	I'm not sure	Unable to take up an opportunity they were offered

	True	False	I'm not sure	Unable to take up an opportunity they were offered
The practitioner gained experience as a co-author on a published paper or report (for example a journal article or report to a funding body)	○	○	○	○
The practitioner was asked to co-author a paper or report but was unable to take up this opportunity	○	○	○	○
The practitioner presented the findings of the study at a local event or is due to in the near future (for example an event within their organisation or your organisation, presentation to local stakeholders)	○	○	○	○
The practitioner presented the findings of the study at a national event or is due to in the near future (for example a national conference, professional body meeting)	○	○	○	○
The practitioner presented the findings of the study at an international event or is due to in the near future (for example an international conference)	○	○	○	○
The practitioner was not offered the opportunity to develop dissemination skills	○	○	○	○
The practitioner developed dissemination skills through other dissemination activities (please provide details in the box below) ☐	○	○	○	○

Consequence: Individual Research Capacity Building (Professional development)

We found that Researcher Practitioner Engagement can contribute to the professional development of academic researchers.

Please rate the following statements to identify if engaging this practitioner in this study contributed to these aspects of your professional development.

Engaging with this practitioner in this study enabled me to develop:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Understanding of the clinical area under consideration	○	○	○	○	○
New knowledge in relation to the clinical area under consideration	○	○	○	○	○
Knowledge which can be used in subsequent study protocols in this clinical area	○	○	○	○	○
Improved understanding of research needs in this clinical area	○	○	○	○	○
Improved understanding of factors to consider when carrying out research in this clinical area	○	○	○	○	○
Understanding of how study findings can/have influenced clinical practice	○	○	○	○	○

Consequence: Individual Research Capacity Building (Future research activity)

Engaging in subsequent research activities is an outcome of Researcher Practitioner Engagement. Please rate the following statements to help us to identify if this was an outcome which you experienced.

Engaging a practitioner in this study has:

	Definitely true	Somewhat true	Neither true or false	Not true	Definitely not true
Motivated me to engage practitioners in a subsequent study	○	○	○	○	○

	Definitely true	Somewhat true	Neither true or false	Not true	Definitely not true
Discouraged me from engaging practitioners in future studies	○	○	○	○	○
Encouraged colleagues to engage practitioners in their study	○	○	○	○	○

Consequence: Improved clinical relevance of a study and its outcomes

We found that Researcher Practitioner Engagement has the potential to improve the clinical relevance of a study and its outcomes.

In relation to this specific study, please rate each of the following statements to identify any contribution engaging a practitioner in this study may have made to the clinical relevance of this study and its outcomes.

Engaging with a practitioner in this study has:

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Contributed to the feasibility of this study	○	○	○	○	○
Added value to the study	○	○	○	○	○
Contributed to the impact of this study	○	○	○	○	○
Improved the internal validity of this study	○	○	○	○	○
Improved the external validity of this study	○	○	○	○	○
Improved the overall methodological quality of this study	○	○	○	○	○
Increased the relevance of this study to clinical practice	○	○	○	○	○

	Definitely true	Somewhat true	I'm not sure	Not true	Definitely not true
Influenced the likelihood of the application of the study findings in local practice	○	○	○	○	○
Influenced the likelihood of the application of the study findings in wider practice	○	○	○	○	○

Consequence: Influences on the research process

Do you think that engagement of a practitioner in this study had a positive influence on any of the following aspects of the study:

	Yes	To some extent	No	I don't know	Not relevant to this study
Content of the study protocol	○	○	○	○	○
Study funding	○	○	○	○	○
Gaining study approvals (Eg ethics or Trust approvals)	○	○	○	○	○
Participant documentation (e.g Participant information sheet)	○	○	○	○	○
Feasibility of the study	○	○	○	○	○
Identifying appropriate participants	○	○	○	○	○
Recruiting participants to the study	○	○	○	○	○
Design of the study intervention	○	○	○	○	○

	Yes	To some extent	No	I don't know	Not relevant to this study
Delivery of the study intervention (e.g scheduling)	○	○	○	○	○
Choice of outcome measures	○	○	○	○	○
Data collection tool (e.g survey, interview schedule)	○	○	○	○	○
Data collection process	○	○	○	○	○
Analysis and interpretation of the findings	○	○	○	○	○
Overall outcome of the study	○	○	○	○	○
Dissemination of the study	○	○	○	○	○

Measurement of the outcomes of Researcher Practitioner Engagement

We are interested to know if you have recorded or measured any of the benefits you may have experienced from engaging a practitioner in this study. Please indicate below if and how any of the consequences you experienced were measured or recorded:

	Not measured or recorded	Reflective notes	Additional evaluation work carried out	Detailed in report to funders (or similar)	Annual appraisal	Formal process evaluation	Other
Contribution to my professional development	○	○	○	○	○	○	○
Impact on the clinical significance of this study	○	○	○	○	○	○	○

	Not measured or recorded	Reflective notes	Additional evaluation work carried out	Detailed in report to funders (or similar)	Annual appraisal	Formal process evaluation	Other
Influence on any of the research activities within this study (as listed in the previous question, for example study protocol, recruitment, data collection tool etc)	○	○	○	○	○	○	○

Finally,

	Yes	To some extent	No	I don't know
Do you think the practitioner added any value to this study?	○	○	○	○
Did you feel that the practitioner's contribution was equitable to yours?	○	○	○	○
Do you think the practitioner's role in the study was defined from the early stages?	○	○	○	○
Was the practitioner considered a member of the research team?	○	○	○	○
At any point did you feel like you were 'using' the practitioner?	○	○	○	○
Did you perceive that any elements of this study influenced the practitioner's future actions or decision making in their clinical practice?	○	○	○	○

	Yes	To some extent	No	I don't know
Do you think the practitioner's role in this study enabled them to contribute to the production of knowledge to inform clinical practice?	○	○	○	○

Please provide details of any additional consequences you may have experienced and/or additional methods used to record or measure any of the benefits experienced that have not already been identified:

End of survey comments

Thank you for taking the time to complete this survey. Your responses will be recorded once you press the "Click here to record your responses" button at the bottom of this page.

Additional comments: **If you have any additional comments in relation to your responses in this survey or any aspects of your experience relating to Researcher Practitioner Engagement that were not covered that you feel would add to your responses, please use the comment box at the bottom of this page.**

Further questions: **If you have any further questions about our study, please email the principal investigator Nikki Daniels (daniels-n@ulster.ac.uk).**

Withdraw your responses: **If you change your mind and would like to withdraw from the study anonymously, please email Paul Henry (p.henry@ulster.ac.uk) before 30th October 2019.**

Complete a brief follow up survey: **From those who have kindly completed this survey, we will be selecting a small random sample to complete a much**

shorter survey of similar format. If you would be willing to complete this additional survey in approximately two weeks time, we would be grateful if you could register your email address to enable us to send the link to this second survey to you. A contact details form can be accessed once your survey has been submitted.

Register for future studies: **Should further areas for investigation in relation to researcher practitioner engagement emerge from the findings of this study, subsequent research may be carried out. Once you have submitted your responses to this survey you will be invited to express interest in taking part in future studies by registering your email address.**

Please note, the document in which you will provide your email address is not linked in any way to your survey, therefore please be assured that your responses will remain anonymous.

Additional comment: this box can be used to provide any additional comments in relation to your responses in this survey or any aspects of your experience relating to Researcher Practitioner Engagement that were not covered that you feel would add to your responses

Appendix 21: Exemplar to show data progression through three phases of the concept development

Theoretical phase

Attribute 2: Values the contribution of researchers and practitioners' perspectives, skills and knowledge	
	Extracted from related concepts
Brown *et al.* (2001)	Identifying the special resources of each party and their relevance to shared purposes can help to balance power differences that might otherwise undermine co-operation between researchers and practitioners Recognizing that all the parties bring special resources can help build the climate for democratic dialogue. The more parties recognise the value of each other's unique and relevant capacities, the more the incentive to utilise them. PRE initiatives must come to terms with the different values, goals, perspectives and capacities of their participants.
Brown *et al.* (2003)	Combining perspectives to build concepts, insights and practical innovations that neither could produce alone. The implicit and explicit knowledge of practitioners can be a vital resource to researchers.
Deverka *et al.* (2012)	Considering different points of view
Norris *et al.* (2017)	Listening and understanding; being heard and considered. Respect and sincerity. Sincerity communicated to and felt by stakeholders. Embody the qualities of being "authentic," "sincere," or "genuine"— (P76, medical director). "genuinely…supported to be involved and heard…..perspectives are being heard and being incorporated into the work" (P77, strategy lead)
	Extracted from instances of the phenomenon
Campbell *et al.* (2015)	Mutual respect
Fitzgerald *et al.* (2003)	The sense that each member's contribution was prized. Each Nurse Specialist was viewed as a full member of the team
Patterson *et al.* (2011)	Appreciation of the other's role and contribution to a shared goal - the production of evidence

Fieldwork Phase

Attribute 2: Values the contribution of researchers and practitioners' perspectives, skills and knowledge

RESEARCHERS

Participant	Agreement	Comments
Focus Group R1		
AR1	Agree	I can't see a situation where you would disagree with it really
AR2	Silent	
AR3	Agree	I think there's probably also different levels. Obviously, the more involvement that there is the more value for each involved
AR4	Agree	The bottom line is, whether practitioners are authors on the paper that comes out, they clearly haven't been valued and allowed to be as involved as they should be
Focus Group R2		
AR5	Agree	That's essential….people bring different things and it's absolutely valuing, respecting the different things that people bring to the whole process.
AR6	Agree	Absolutely agree
AR7	Absent	
AR8	Agree	A no brainer
Focus Group R3		
AR9	Agree	Agree but I think sometimes, especially at the beginning of a study, for some studies, some people may feel it's more of a tick box rather than engagement. Doing it because the input needs to be seen to be there.
AR10	Agree	I think that would have to be a key attribute I don't think anyone would want to participate in something where they weren't valued.
AR11	Agree	I'm not very sure whether it's an evenly distributed attribute, because I think sometimes the researcher/practitioner divide means that our perspectives and our language and knowledge base can be quite different and it evolves and you meet often in the middle, once you've got much more durable relationships, whereas at the start, perhaps that attribute is a little bit sketchy. So, it's a bit more transparent or less durable at the start then moves to more shared ownership
Focus Group R4		
AR12	Agree	Depends on the sort of contribution being made. Maybe the practitioners would be thinking – the more buy-in you've got, the more value you've

		got in the research. Whereas if you've got less involvement, you're maybe less engaged with it. With my study, there's an invaluable contribution from the practitioners…. had they not have been willing to engage in that process, the study probably wouldn't work, because we wouldn't get the data collection and you wouldn't get the numbers
AR13	Agree	They helped us to think about what we are doing more Not necessarily helping the whole project, opportunity to think and reflect…..to ask more questions about what we're proposing to do

Focus group R5 (Triangulation group)

AR15		Each has their role, and each are very valuable in their own role Clinicians who have an interest in what research can add to their practice, and you as a researcher, recognise the value of what clinicians bring to that partnership in order to answer a research-based question Opposite equals
AR16		Everybody understood their role, and their contribution Consultation in partnership working with practitioners to keep their research question relevant
AR17		It's the recognition of skill sets as well. Recognition of the skills that a researcher has, that a clinician may not and the skills that a clinician has in terms of the clinical insight, that the researcher may not. So I think it's awareness of where your skill gaps are It's a subtle balance of a unique set of combined needs, where it works really really well.

PRACTITIONERS

Focus Group P1

AP1	Agree	I think there has been situations where I have suggested changes, I think that has been respected and my contribution has been valued.
AP2	Agree	It's thinking about how is that going to work in the clinical field? When researchers are talking about what they want to do, I think it's having that discussion and listening to each other. Because I think when you're going into people's homes, for instance, and doing your intervention as a clinician, you know the obstacles and the opportunities that there are and what you're facing day in, day out and I think that needs to be reflected when you're thinking about a research proposal and I think it's just that slightly

		different perception and that vision and it’s actually having that open forum that you can share that and understand that.
AP3	Agree	I think from my experience, when I raised concerns about certain protocols, even if things couldn’t be changed, what was very important was that there was a discussion and that both sides were heard and things for and against and what couldn’t be changed had been chosen to be that way, was well evidenced and described and had sound reasoning. So you had to go along with it, even if you didn’t necessarily think that’s how you’d want to do things clinically and there was a reason for doing it that way in research science I certainly felt valued
Focus Group P2		
AP4	Agree	I know the researchers that I’m working with, they are clinicians themselves, but I don’t think they’ve actually worked clinically for quite some time. But I think there’s a few things they’d just assumed would happen and we were like – Oh no, it doesn’t really work like that anymore
AP5	Agree	Once they started working with me and they could see a different perspective, they then were really really keen to kind of use that different perspective
Focus Group P3		
AP6	Agree	There has to be the respect for the clinical team in particular, bringing that understanding and knowledge to the actual research study. Often the researchers are employed full time, or a huge proportion of their time is dedicated to the research where the rest of us are juggling that alongside lots of other things. So the contribution needs to feel valued and as a clinician, you need to feel actually that your skills are as important as the researcher’s skills and I’m not sure that that always happens I think that’s where I often feel most valued as a clinician, (*protocol/formative stages*) because you’re bringing that clinical knowledge…..helps clinicians to feel that they’ve got a greater contribution to the actual research process as well I was working with an engineering student and we were looking at measuring tremor in people with MS and the example that you gave there around the technical skills and he was absolutely incredible in terms of his level of knowledge around the device But actually he

		had no understanding of the fact that you couldn't get people to sit in the position that he wanted them to be in and they couldn't sit for the length of time that he wanted them to sit and actually there was no point in offering people appointments at 9 o'clock in the morning.
AP7	Agree	Often your skills and your knowledge are being brought in at a later stage, so it might be more about making tweaks to various things, but actually not to the main protocol, because at that point, it has already been through various ethics and research committees when it gets to the clinician and you say "actually, you know, I find this, or you find this and you can make maybe minor changes, but actually the bulk of it has been done prior to that It makes a big difference in how you feel about the study. Our protocol is that we should be doing the recruitment visits ideally on a clinic day. But that's fine for the people who are going to the other hospitals and as researchers they have the time. But for me, I've managed it twice and it was pure luck. Any other day, it just doesn't happen. It's too long, especially for small children and that has been absolutely no problem. There hasn't been any issue. I haven't been told "Oh you need to get it done during clinic days and I think if I was being told you need to get it done on those days, it would really sort of make me much more stressed, or not really be kind of enthusiastic about trying to recruit patients. Whereas knowing that I can sort of pick and choose the days makes it easier.
AP8	Agree	Been a tendency for the researchers to think they're driving the project and that the practitioners are just supplying information and maybe their contributions are not as valuable. I would say, possibly [researchers] don't always have a very good grasp of the practicalities, so my study involves making video recordings of both small children and sometimes it's very difficult to get those children to do the activities and we tend to get feedback [from the researchers] like "Oh, essentially just try harder. You need to get it – just try harder." Not a real grasp that that can actually be really difficult.

Analytical Phase

Theoretical phase: The clinical knowledge of practitioners is highlighted as a valuable resource to researchers (Brown *et al.* 2003). Appreciating each other's contribution (Patterson 2011) and mutual respect of each other's experiences and knowledge (Campbell *et al.* 2015) were identified as important elements of successful researcher and practitioner engagement. This attribute came mainly from the definitions of related terms, that both parties have different sets of skills and knowledge, and so bring different perspectives. It is recognition of these differing perspectives by both parties, that both are valuable to the process and recognition of the value that each party can add. That alone neither party could produce the outcome. This is very reflective of the underlying principle of Mode 2 knowledge production.

Fieldwork phase: When put to fieldwork participants, all agreed that this is an important attribute within the concept of Researcher Practitioner Engagement. One researcher disputed the inclusion of 'skills' as they felt that it was not necessarily practitioner's skills that were required but their clinical perspectives. The triangulation group were very clear that a key element of researcher practitioner engagement is recognising the different skill sets of both parties and the value both bring to a study. Practitioners also agreed and used examples to share how and when they felt their clinical skills had been valued. This ranged from their involvement in the formative stages, where one practitioner said she felt her clinical perspectives were most valued, and in the day to day logistics of carrying out study activities.

Interpretation of theory and fieldwork (combined with entries from reflective journal): There was agreement throughout that this is a relevant attribute to the concept of RPE. No participant disputed relevance. In the researcher focus groups R1 to 4, most asserted that this was a given, and most of the discussion around this centred on higher levels of engagement equating with greater levels of valuing the practitioner's input. This, I interpret as being reflective of the continuum of engagement. There was not a lot of expansion within R1 – 4 on why the perspectives needed to be valued beyond recognising that practitioners can bring something different to the process. I think this is where caution needs to be paid in respect of this attribute; researchers clearly value practitioners input in that they value that they recruit participants for them and they collect data for them, so some of the contributions from researchers who have more experience of this type of engagement, this is what I hear them saying in terms of them valuing that the practitioner's engagement in this way is enabling their study to be feasible. But what the practitioners are clear about is that their clinical perspectives need to be mirrored in the actual research to demonstrate that they have been valued, and where this can happen is in the design of the study protocol (as highlighted in relation to attribute 1).

The triangulation group and the practitioners seemed more detailed and specific in their discussions about what this actually means, why the practitioners' perspectives must be valued, why it's an important element of the concept, what being valued looks like.

Reference here from the practitioners about three things 1) that the way they can feel valued is if they have input into the protocol design, because if they are brought in at a later stage, even if their clinical perspectives are listened to and are valued, they may not have any effect because the protocol is already written and changes cannot necessarily been made. So, this impacts on opportunity to feel valued (i.e. if you value my opinion you will seek it at the beginning; don't assume because you have been a clinician that this means you don't need my clinical perspectives in this study)
2) if clinical perspectives are taken into account in the protocol design, then decisions can be made in relation to the study that will make the practitioner more likely to be able to engage (thinking about examples given about practicalities of shift patterns) and decisions made that can affect the quality of the study (examples such as scheduling of intervention at a time that would be most suitable based on a patient's clinical needs; likelihood of patient taking part/recruitment)
3) that if their clinical perspectives and knowledge are valued then they will be trusted to make decisions independently in relation to parts of the study, illustrated by P7's example of having autonomy to schedule data collection times (this came out in discussions around attribute 4 'shared decision making' in focus group P3)

Triangulation focus group (R5) also spoke a lot about the formative stages, which also came out in discussions with practitioners. Does this attribute need to be extended to add "add from the formative stages of the study"? And/or this added to attribute one, engagement varies but must take place in the formative stages (to ensure clinical perspectives can influence the research process)

From the triangulation group data, the link between this attribute and the discussions around consequence 1 became clear in terms of practitioner's influence on the research process; if researchers value practitioner's input/clinical knowledge, then the research design will be positively influenced by these perspectives and then the research more likely to be relevant/feasible/usable.

After analysing the focus groups and seeing that the practitioners were very clear about what they could bring; that when they weren't valued it was a more researcher led process. That researchers fell in to 2 camps; 1) realising that they perhaps use practitioners and is lob sided to researchers, mainly pragmatic reasons 2) clear that they couldn't do this without practitioners, so we have to make sure we have some way of engaging them. That they are bringing their understanding and knowledge to the actual study, not that they are in a role, like a data collector, but actually bring clinical knowledge to the study. This then is one of the key elements that makes RPE different from a hired hand approach and can limit the outcomes of a hired hand approach. That is what I am hearing from the examples the practitioners are sharing. This sense of bringing clinical perspectives to the study is coming more from practitioners rather than researchers in focus groups R1-4 and the triangulation group; get a real sense that they want to do this as they can see the value of it.

Based on the practitioners' viewpoint on this, should the attribute perhaps just focus on the practitioner's perspective? Automatically, the researcher's perspective is included as it is a researcher-initiated process, so by focusing the attribute just on practitioner's clinical perspectives reinforces the importance of ensuring that they are valued.

After hearing this from practitioners in focus group P3, I went back to the data from the researchers focus groups (R1-4) and could see that from what they were saying in relation to ‘influences the research process’ (consequence 1), isn’t actually a consequence but that it needs to happen so it has to be an attribute; I also hear the researchers saying a lot that the study couldn’t happen without the practitioners, but this is coming from some of the researchers who have had experiences which align with hired hand approach, so it is difficult to discern, because of course it couldn’t happen without them if they didn’t recruit or they didn’t collect data, but in doing those roles, have they been given the opportunity to use their clinical perspectives within the study? It was not appropriate within the objective of the focus groups to explore this in greater depth to establish if those researchers who talked about the importance of practitioners to recruitment and data collection, if they felt they had valued clinical perspectives within this process. But it is clear from what the practitioners are saying that this is what they need to happen to feel valued and engaged.

Outcome: recognise the linkage between valuing practitioner’s clinical perspective (proposed attribute 3) and the influence on the research process (consequence 1); that this is not a consequence but a requirement and so needs to be represented as an attribute. By removing ‘researchers’ perspectives and focusing on clinical perspectives reinforces that these need to be valued for RPE to have taken place.   Acknowledge importance of valuing clinical perspectives in the formative stages of a study (protocol design).