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What are the practices and experiences of prescribing practitioners in the United Kingdom? A mixed-methods study

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Background

Pharmacological treatment is the most common form of healthcare intervention; 1.1billion items were dispensed in the community in England alone in one year. With increasing numbers of prescribers being educated, and a growing number of professions being eligible to undertake the course, it is imperative to understand the reasons why some prescribers do not use their qualification, or why severe constraints are restricting practice for some. The restricted or non-use of the qualification is wasteful of the expense of education and invested time. Prescribing rights, for healthcare professionals other than doctors, began in the United Kingdom (UK) with nurses and health visitors in 1992. Currently, the UK has more professions eligible to prescribe than any other country: nurses, midwives, podiatrists, pharmacists, physiotherapists, radiographers, dietitians and advanced practice paramedics. Although they all undergo identical education and assessments in the V300 course as all other professions, dietitians and diagnostic radiographers are restricted to supplementary prescribing where everyone else have independent prescribing rights.

Study Design

This is a mixed methods investigation of the practice and experience of prescribing practitioners in the United Kingdom. An integrative literature review was undertaken and Role Theory, encompassing identity theory, social theory and organisational theory, was used as the theoretical framework. Phase 1 is a quantitative survey with an original questionnaire. There were n409 valid responses. Descriptive statistics were analysed with the use of SPSS. Phase 2 consisted of n11 qualitative semi-structured interviews. Reflexive thematic analysis was used to analyse the data. Findings from both phases were discussed together.

Findings

The key findings show that the use of supplementary prescribing is increasingly restrictive in the rising use of advanced clinical practice roles. Newly qualified prescribers are in a vulnerable position as confidence is low at this point, and almost half declared they do not have the level of support they need. There are healthcare practitioners who have qualified and never prescribed; lack of support, lack of confidence, lack of need to prescribe in their clinical area are cited as reasons. Colleague support and supervision, along with CPD, are recognised as highly influential to a prescriber flourishing or failing to prescribe. There are still prescribers who experience significant delays due to IT systems that are unable to accommodate their profession. The Competency Framework for All Prescribers became a mandatory part of prescriber education in 2018 and there is currently a wide variation of prescriber awareness of or experience using the Framework. Underpinning all these aspects is how they affect, or are affected by, prescriber confidence. These findings have implications for Higher Education Institutes, practice and further research.

Dedication

To my mum, whatever happens next, I know you would have been proud of me. I love you always.

Acknowledgements

Thank You

This PhD journey has been extraordinary. I have loved it, discovered old insecurities, felt as though I was pulling myself up a cliff face by my fingernails, experienced and named my imposter syndrome. And I loved it again. I am fiercely proud of my students who gain skills and knowledge that will – if they choose to use their qualification – change and enrich their clinical practice.

My supervisors, Professor Alison Leary and Dr Adéle Stuart-Lord; my gratitude for your clarity, kindness and patience. I learned very quickly I can trust you both. That crucially includes trusting you to tell me like it is and when I needed to do better, as well as when I did well. You have always done so with great skill. I could not have got here without you.

Professor Lesley Bailey for working with me on the analysis of the qualitative data; I cannot tell you how much I appreciate your experience, feedback and discussion.

@PhDForum is my favourite find on Twitter, founded by Dr Donna Peach, and co-created by PhD students all over the world. Those of you who finished before me – congratulations, Doctors. It has been an honour to work alongside you, attend your final defence and celebrate with you. Those of you still working toward the finishing line – keep going, you've got this, Doctors to Be.

LSBU Doctoral Academy Peer support Group, thank you all for your support, in so many ways.

Dr Richard Nevell, my nephew, for supplying the winning answer to my formatting problem. Twice.

May and James Baldwin for rescuing me when the page numbers fell apart.

Dr Rachel Dewar-Haggart for saving my sanity when SPSS was spinning me in circles.

Dr Katy Hunter, for your support, friendship and proofreading skills.

Helen Ward, for your encouragement to undertake my PhD studies and your certainty I could do this.

Every individual who responded to my survey, and who agreed to participate in the interviews – I sincerely thank you, for your time, your candour and for allowing me to represent you.

"Get tea, get a grip, get on with it." Me, speaking to myself, a thousand times.

Glossary of Abbreviations

AHP – allied healthcare professional

BNF – British National Formulary

CMP – clinical management plan

CPD – Continuous Professional Development

DN – District Nurse

FOI – Freedom of information

GPhC – General Pharmaceutical Council

HCPC – Health Care Professions Council

HV – Health visitor (archaic)

NMC – Nursing and Midwifery Council

NMP – non-medical prescriber

NPF – nurses prescribing formulary

SCPHN – Specialist community public health nurses or midwives.

UK – United Kingdom

Glossary of Definitions

Allied Healthcare Professional – dietitians, paramedics, podiatrists, physiotherapists, radiographers. These are the professions that are entitled to undertake the education to qualify as a prescriber, not an exclusive list of AHPs.

Clinical management plan – a tripartite signed agreement between a doctor or dentist (acting as the independent prescriber) nurse, midwife, pharmacist or AHP (acting as the supplementary prescriber).

Community nurse – works in community settings without a specialist qualification.

Community prescriber – a nurse who holds the V100 (specialist) or V150 (non-specialist) prescribing qualification.

District nurse – works in the community and holds a specialist qualification.

Independent prescriber – Holds V300 qualification. Has full prescribing rights, limited only by clinical scope of practice.

Non-medical prescriber – those prescribing healthcare practitioners who are not doctors or dentists.

Prescribing practitioner – those prescribing healthcare practitioners who are not doctors or dentists. An alternative to using NMP that defines the professional as 'not a doctor'.

Supplementary prescriber - Holds V300 qualification. Can only write prescriptions defined in a clinical management plan.

Chapter One

BACKGROUND

1.1   Introduction

This thesis investigates the practice of (non-medical) prescribing practitioners in the United Kingdom (UK). Multiple professions are entitled to undergo the education to hold a qualification for the prescribing of medicines. The value of prescribing healthcare professionals is established; this thesis explores current practice and experience in the UK. Doctors, dentists and optometrists are beyond the scope of this thesis, so are not included in naming "prescribing healthcare professionals" or "prescribing clinicians." The role of nurse practitioner was first introduced in the United States of America (USA) in 1965 and nurse prescribing rights were introduced there in the 1970s (Pulcini & Vampola, 2002). By 2011 there were seven countries that had implemented nurse prescribing (Kroezen et al., 2011) including the UK, where prescribing began with nurses and health visitors in 1992. In 2011, the UK had more professions eligible to prescribe than any other country (Kroezen et al., 2011). Although it is not possible to verify this is still the case in a single source, an internet search for prescribing practitioners in Australia, America and Canada confirms that the range of prescribing professions is still more limited than in the UK. None of them have paramedic, radiographer or dietitian prescribers. As of 2019, nurses could prescribe in just 13 of the 44 European countries (Maier, 2019).

There is a wealth of research on different aspects of prescribing, but nevertheless, there are aspects that are under-represented or absent from current research. These areas include focus on the newly qualified prescribers, focus on those who have qualified but never prescribed, awareness and use of the Competency Framework for All Prescribers (Royal Pharmaceutical Society (RPS), 2021) and a current study that includes all

professions with prescribing rights. This thesis sets out the investigation of some areas of prescribers' practice and experience that are unmet by literature to date.

1.2   Historical Context

The genesis of non-medical prescribing in the UK was the Cumberledge Report (Department of Health and Social Security (DHSS) 1986) which recognised the need for nurse prescribers in the community. The driver of the report was to increase efficient delivery of care in the community, foster a closer working relationship between community nurses and general practitioners (GPs) and enable a better use of resources. The Crown Report (Department of Health (DH) 1989) examined the prescribing practices in the community and then advocated for district nurses (DN) and health visitors (HV) to begin prescribing, recognising the potential to deliver appropriate pharmacological therapy in a timely manner. DNs and HVs were part of a pilot for community prescribing in 1994 from a limited formulary. The positive effect was such that four years later an extended formulary was introduced. This gave a slightly broader, but still restricted, range of products that they were able to prescribe than had been possible in the previous nurses' formulary.

Following recommendations of the second Crown Report (DH, 1999), supplementary prescribing began in 2003 for nurses and pharmacists (Cooper et al., 2008). In 2006 nurse and midwife independent prescribers had restrictions removed and were able to prescribe from the whole British National Formulary (BNF); their individual boundaries, since then, have been set by their own scope of practice. This defines independent

prescribing as it is now practised. Pharmacists also had the scope to convert to, or qualify as, independent prescribers from 2006 (Medicines for Human Use (Prescribing) (Miscellaneous Amendments) 2006) with certain limitations on prescribing controlled drugs. Physiotherapists, podiatrists and radiographers were given the scope to qualify as supplementary prescribers. Physiotherapists and podiatrists were sanctioned to convert to or qualify as independent prescribers in 2013, again with the exception of some controlled drugs and unlicensed medicines (Human Medicines (Amendment) Regulations (2013).

Optometrists, supplementary prescribers since 2005 (Cooper et al., 2008), have been able to prescribe independently since 2008 (Rumney, 2019). They are restricted to prescribing licensed medicine for conditions affecting the eye and surrounding tissue and cannot prescribe any controlled drugs (College of Optometrists, 2011). Optometrists, however, do not undertake the V300 qualification; they undertake a specialist qualification, and their practice is outside the scope of this study.

In 2016 existing therapeutic radiographer supplementary prescribers in England had the option to convert their qualification to an independent qualification (NHS England, 2016a) followed by Scotland on 31st December 2016 (NHS Scotland, 2016). Also in 2016, the first dietitians were able to start education to be supplementary prescribers, bringing another allied health professions (AHP) into the prescribing arena (NHS England, 2016b). Since 2018, advanced practice paramedics can undertake education to be independent prescribers (Table 1) and unlike all other AHPs, they were not required to qualify as supplementary prescribers only in the first years of paramedic prescribing.

This is due to the nature of their work and the suitability of using supplementary prescribing and its attendant paperwork in acute care situations. However, paramedics are, as of 2023, unable to prescribe any controlled drugs as independent prescribers.

Table 1: Timeline of Prescribing in the UK

1986 Cumberlege Report (DHSS, 1986) concluded that district nurses (DNs) and health visitors (HVs) would save a large amount of their own time, and doctors' time, if they were able to prescribe dressings, skin care products and appliances.

1989 Crown Report (DH, 1989) proposed limited list of medications that DNs and HVs should be able to prescribe.

1992 Medicinal Products: Prescription by Nurses etc Act (1992) allowed DNs and HVs to prescribe from a narrow formulary identified in the Crown Report.

1994 Introduction of Nurse Prescribers' Formulary (NPF). Piloting prescribing by DNs and HVs.

1996 Prescribing by HVs and DNs is introduced nationally.

1998 National independent nurse prescribing possible for DNs and HVs (with V100 education) from revised NPF.

1999 Second Crown Report (DoH, 1999) reviewed the prescribing to date and, due to its success, proposed that prescribing roles should be developed for healthcare professionals, other than DNs, HVs, dentists and doctors.

2001 All nurses with V100 qualification able to prescribe from NPF. Health and Social Care Act (2001) introduced, paving the way for supplementary prescriber role, annotated as V200.

2002 Prescribing from Nurse Prescribers' Extended Formulary possible for V200 educated nurses, including more prescription-only medicines. Health visiting became regulated by Nursing & Midwifery Council and categorised as Specialist Community Public Health Nurses (SCPHN) instead of health visiting (Baldwin, 2012).

2003 Prescription Only Medicines (Human Use) Amendment Order (2003) allowed suitably educated nurses and pharmacists able to practise as supplementary prescribers. V200 becomes redundant.

2005 Regulatory changes allowed nurse, midwife and pharmacist supplementary prescribers to prescribe all controlled drugs except Sch.1 (Misuse of Drugs (Amendment) (No. 2) Regulations 2005) and unlicensed medicines.

2005 Medicines for Human Use (Prescribing) Amendment Order (2005) allowed suitably educated physiotherapists, midwives and chiropodists/podiatrists, radiographers (diagnostic and therapeutic) and optometrists able to practise as supplementary prescribers.

2006 Medicines for Human Use (Prescribing) (Miscellaneous Amendments) 2006, enabling nurse, midwife and pharmacist independent prescribing and controlled drugs from column one of schedule 3A only.

2008 Medicines for Human Use (Prescribing) Miscellaneous Amendments) Order 2008, enabling optometrist independent prescribing.

2009 Medicines (Exceptions and Miscellaneous Amendments) Order (2009) allowed nurse and pharmacist independent prescribers to prescribe unlicenced medicines. This relates to the mixing of medicines.

2012 Misuse of Drugs (Amendment No.2) Regulations (2012) allowed nurse and pharmacist independent prescribers to prescribe all controlled drugs (with the exception for some for addiction).

2013 Human Medicines (Amendment) Regulations (2013) legislation passed to allow physiotherapists and podiatrists to prescribe independently in England.

2014 NHS Scotland (2014) The National Health Service (Physiotherapist, Podiatrist or Chiropodist Independent Prescribers) (Miscellaneous Amendments) (Scotland) Regulations.

2014 NHS Wales (2014) The National Health Service (Physiotherapist, Podiatrist or Chiropodist Independent Prescribers) (Miscellaneous Amendments) (Wales) Regulations.

2015 Physiotherapists able to prescribe a limited range of controlled drugs under Misuse of Drugs (Amendment) (No.2) (England Wales and Scotland) Regulations.

2016 Human Medicines (Amendment) Regulations (2016), supplementary prescribing introduced for Dietitians. Therapeutic radiographers able to prescribe as independent prescribers (diagnostic radiographers still supplementary prescribers).

2016 National Health Service (Dietitian Supplementary Prescribers and Therapeutic Radiographer Independent Prescribers) (Miscellaneous Amendments) (Scotland) Regulations 2016.

2018 Human Medicines (Amendment) Regulations (2018), introducing IP for advanced paramedics

Adapted from Cooper et al., (2008)

1.3   Prescribing Qualifications

There are different qualifications for prescribers (Table 2). These prescribing roles are defined in UK law Human Medicines Regulations (2012) and multiple amendments. Two professions - dietitians and diagnostic radiographers – can currently be annotated as

supplementary prescriber only. While their prescribing is also defined by their scope of practice, they cannot prescribe anything until there is a clinical management plan (CMP) in place (Human Medicines (Amendment) Regulations, 2016; NHS Scotland, 2016). A clinical management plan (Appendix 1) is a defined plan of care that is a tripartite agreement between an independent prescriber, a supplementary prescriber, and the patient (Prescription Only Medicines (Human Use) Amendment Order, 2003). Currently, only a doctor or dentist may legally act as the independent prescriber on a CMP, even though other professions have independent prescribing status (Prescription Only Medicines (Human Use) Amendment Order, 2003). The CMP allows the supplementary prescriber to prescribe within the agreed parameters of the CMP for a maximum of a year before the CMP must be rewritten. The independent prescriber has overall responsibility, although naturally that does not absolve the supplementary prescriber of their own responsibility and accountability. It is used for long term conditions and is unsuitable for treating self-limiting or acute conditions, or in urgent care settings. Safety netting to define when it is necessary to refer back to the independent prescriber, or stop or change treatment, are also defined on the CMP (Prescription Only Medicines (Human Use) Amendment Order, 2003). It is usual for independent prescribers to be annotated as supplementary prescribers in addition to their independent prescriber status.

Table 2: Prescribing Qualifications

Qualification	Professionals who undertake the qualification
V300	**Independent and Supplementary prescribers.** Undertaken by nurses, midwives, pharmacists, podiatrists, physiotherapists, radiographers (diagnostic and therapeutic), dietitians and paramedics. Currently most of these professions have dual annotation on qualifying (independent and supplementary prescribers). Diagnostic radiographers and dietitians are annotated as supplementary prescribers only. V300 can be undertaken as a stand-alone qualification or as part of a degree or master's pathway. (This replaced the V200 which allowed nurses to prescribe from an extended formulary as independent, but not supplementary prescribers.)
V200	**Independent prescribers.** This qualification has not been awarded since 2003 but is still valid for those who have this annotation on the professional register.
V150	**Community prescribing (non-specialist).** A stand-alone unit for practitioners who are working in the community but have not undertaken any of the specialist community qualifications. Prescribe from the NPF only. The V150 is being phased out and is no longer part of the NMC standards (2018a) for SPQ or SCPHN.
V100	**Specialist community prescribing.** For specialist community practitioners (district nurses, school nurses, public health nurses all are registered as SCPHN). Prescribe from the NPF only. The V100 taught as a part of the specialist community practitioner qualification. The difference between V100 and V150 is who holds the prescribing rights (specialist vs non-specialist) not what they can prescribe.

The conversion from supplementary to independent prescribing is reserved for clinicians who have been successful in the V300 but initially qualified as supplementary prescribers only. This level of restriction was lifted for nurses and pharmacists in 2006

(Medicines for Human Use, Miscellaneous Amendments, 2006). This meant that already qualified supplementary prescribers were given the chance to convert this to independent prescribing status by undertaking a conversion course – this is a shorter version of the V300 covering aspects that are specific to the practicalities and legislation that govern independent prescribing. The same opportunity applies to other professionals who qualified initially as supplementary prescribers only, since legislation was amended to permit them education as independent prescribers (Table 1). On passing the conversion course, the successful candidate would be awarded a practice certificate, and they would be annotated by the General Pharmaceutical Council (GPhC) or Health Care Professions Council (HCPC) as an independent prescriber.

A community prescriber, who holds either V100 or V150 qualification, must undergo the V300 course in order to qualify as an independent or supplementary prescriber. A community prescriber is not a supplementary prescriber and is not entitled to use a CMP to expand the range of drugs they can prescribe. By the same principle, a community nurse cannot undergo the conversion course, as the conversion is from one prescribing status to another (supplementary to independent) within the remit of the V300. It is not a means of converting one qualification to another. Community prescribers' practice is restricted by the Nurses Prescribers' Formulary (NPF). The difference between V100 and V150 is related to whether a specialist or non-specialist practitioner holds the qualification, not their prescribing rights (Table 2). The V150 is being phased out over 2023/24 and is becoming obsolete. As with the V200, the annotation will remain on the register for those who already hold it, but new annotations will cease. Both independent and supplementary prescribers undertake the V300, but their prescribing rights are

different. Since 2006, an independent prescriber may prescribe anything autonomously from the British National Formulary (BNF) that lies within their clinical scope of practice. Regarding controlled drugs, allied health professionals all have heavy restrictions on their prescribing; they can either prescribe a very few specified controlled drugs, or none at all. A supplementary prescriber can also prescribe anything within their scope of practice but only if a current CMP is in place.

1.4   My position as a researcher

It is important to be explicit that I have been a registered nurse since 1990; I gained my V300 prescribing qualification in early 2006, and I have been an educator in a Higher Education Institute (HEI) on the V300 course since January 2014, becoming course lead in 2017. During my time as an educator, I have seen legislation change to allow physiotherapists, podiatrists and therapeutic radiographers convert their supplementary prescribing only status to independent, and dietitians and paramedics become eligible to undertake prescribing education. In my personal experience as a prescriber, I was in a position where the support I felt I needed to transition from newly qualified to experienced prescriber was available in my place of work. This was because I was able to request and negotiate the level and type of support I needed on an individual basis; this was not an automatic process. At the same time, I was acutely aware this was not the case for everyone in other organisations. Having faced questioning and senior nurses challenging my scope of prescribing practice when I had already been prescribing for several years, I am aware of some of the factors that can potentially undermine confidence and practice. These experiences have shaped my personal perspective on the value and implementation of prescribing by clinicians who

are not doctors. I am also conscious of what the support I did have meant to me as a newly qualified prescriber and I felt the enormity of the responsibility I had. I am aware I cannot fully divorce my experiences and perspectives as a prescriber from my stance as a researcher. Nor would I want to. My perspective as a nurse, an experienced prescriber and as a prescribing educator has led me to formulate this research question, decide how to address it, and analyse the resulting data.

While being a situated researcher was especially important and useful in Phase 2 of my study and my application of reflexive thematic analysis, I feel it is relevant throughout the entire process of my research, including my handling of the quantitative data, because my background was part of the genesis of me to undertaking this sequential design and this research question. I am conscious of this and reflection throughout the PhD experience has helped to keep this in perspective to manage the tension between personal subjectivity and researcher objectivity.

My research question is, "What are the practices and experiences of prescribing practitioners in the United Kingdom?" Many prescribers are of different professions and working in different clinical areas. I considered the possibility of focusing on a specific group of prescribers, such as one or two professions, or just newly qualified prescribers as a group, for example, but given that allied health professionals are underrepresented in the available literature, it was important to me that their voice was present in my study. Given that AHPs are underrepresented in the available literature, and that they may, or may not, encounter similar prescribing experiences, there is a need to investigate prescribing across the range of professions.

This is a mixed methods study with quantitative and qualitative phases that inform each other. Quantitative research seeks impartiality in its processes. However, these are quality markers of quantitative research and while I exercised these in Phase One of data collection and analysis, my position as a researcher is materially important as an asset in the qualitative data collection and analysis (Braun and Clarke 2022a, 2022b). Therefore, I have worked reflexively and kept a journal throughout to support this, as recommended by Walker, Read and Priest (2013).

The concept of the researcher bracketing their own assumptions and previous knowledge originated in one branch of qualitative research, phenomenology, in order to move away from judgementalism and toward objectivity (Husserl, 1931; Stapleton, 1983; Streubert and Rinaldi-Carpenter 2011). The purpose of bracketing is to keep the researcher open to other possibilities beyond their own perspective (Finlay, 2006). Bracketing in qualitative research has been heavily criticised as unrealistic including by Husserl's student, Heidegger, who argued that bracketing was not fully possible as the researcher will inevitably be informed by their own perspectives and experiences (Heidegger, 1992; McConnell-Henry, Chapman & Francis 2009; Dowling and Cooney 2012). While the principle of staying open to possibilities beyond my own position is necessary to avoid pre-determining findings and depth of analysis, using my experience as a situated researcher is no longer seen as a flaw; rather, when applied consciously and transparently, it is an asset. To this end, rather than attempting to practice bracketing, working with my reflexive journal throughout my work helped me find a balance.

1.5   Rationale

Prescribing is more complex than simply writing and signing a prescription or selecting a drug from the correct section of the British National Formulary (BNF) as though it were a catalogue. Pharmacological treatment is the most common form of healthcare intervention; for instance, 1.2billion items were dispensed in the community in England alone (National Health Service (NHS) Business Authority, 2020). It is recognised as a high-risk activity (Guthrie et al., 2011; Guthrie, 2016; Elliot et al., 2018; Cope, Tully & Hall, 2020) in terms of the multiple ways poor or devastating outcomes can arise, and the volume of errors that are made, ranging in severity from no harm done, to death. Medication errors are far from uncommon: over 237million errors were reported in England in 2017 (Elliot et al., 2018). While 72% of these errors caused little or no harm, the remaining 66 million errors caused significant or life-changing harm including directly causing approximately 712 deaths and contributing to a further 1,708 deaths (Elliot et al., 2018 p4). It is the patient who bears the burden of consequences in terms of harm sustained. For these reasons, competencies for prescribing (Royal Pharmaceutical Society (RPS), 2021) encompass skills and knowledge that are critical to safe prescribing, such as history taking, clinical examination and building a therapeutic relationship with the patient, as well as a nationally set standard for pharmacological knowledge and its application (NMC, 2018a; GPhC, 2019; HCPC, 2019). These are intended to be recognised as principles and skills, not isolated tasks (Hall & Picton, 2020; Rae, 2021).

There are discrepancies between professions in terms of the scale of those who do not use their prescribing qualification, and a perceived lack of support and adoption of

prescribing (Ross & Kettles, 2012; Smith, Latter & Blenkinsopp, 2012). For example, mental health nurses are reported to have less support in their prescribing practice than their counterparts in physical health (Ross & Kettles, 2012). With increasing numbers of prescribers being educated, and a growing number of professions being eligible to undertake the course, it is imperative to understand the reasons why some prescribers do not use their qualification, or why severe constraints are sometimes restricting practice. The restricted or non-use of the qualification is wasteful of the expense of education costs and invested time, that is, the time spent in education by the student and the amount of time taken out of clinical practice. Understanding the factors that result in some prescribing practitioners never using their qualification (Ross & Kettles, 2012) or only doing so in a severely restricted manner (RCN, 2014) while others have a very positive experience can inform stakeholders, employers and regulatory bodies.

Awareness of the discrepancies in the experience of prescribing clinicians was a starting point for this study. My position as a clinician, prescriber and educator means that I have experienced and witnessed some of these discrepancies highlighted in the literature, and from there led me to question why this is the case. There are multiple factors that affect the practice of prescribers, as demonstrated in the current body of literature. This study is the first research that includes all the currently eligible prescribing professions. It includes considering whether barriers and facilitators of prescribing practice are changing, where there are gaps in current knowledge, what the experience and perceptions of prescribing clinicians in the UK are, and how that knowledge can inform practice.

The UK is the leading country in prescribing education in terms of the variety of professions who are legally eligible to undertake the course, largely because it was an early adopter in educating prescribers. The data will be of relevance to other countries who are at different stages of developing prescriber programmes. Although there are differences in in culture and law, it is anticipated that the principles will be useful shared knowledge nationally and internationally.

The case for investigation was developed by considering all these aspects: prescribing as a safety-critical aspect of clinical practice; awareness of discrepancies in and experiences of prescribing professions; existing knowledge about influences on prescribing practice; and the fact there are now eight professions eligible to prescribe in the UK. Therefore, the question is:

"What are the practices and experiences of prescribing practitioners in the United Kingdom?"

1.6   Organisation of this thesis

To provide background to the study, this chapter details the history and development of non-medical prescribing in the UK, the different qualifications that come under that umbrella and which healthcare professions are entitled to undertake prescribing education. The initial rationale for this research is given. Chapter 2, Literature Review, appraises the current body of research around prescribing practice in the UK. Aim and objectives are set for this research, and they inform the development of the research process. Chapter 3, Methodology, discusses the methodological options and the choice

of mixed methods and sequential explanatory design, for this research. The philosophical assumptions are discussed, and the methods employed are detailed. Ethical processes and their importance are also discussed. There are two results chapters as this is a sequential study - Chapter 4, Phase 1 Results, and Chapter 5 Phase 2 Results. Chapter 6, Discussion, presents the relevance and importance of the results, discussed in relation to each other as a key point of integration in the mixed methods design. The original contribution of this study and the strengths and limitations of this research are discussed. Chapter 7, Conclusion, presents the overall summary and the researcher's recommendations for application to practice and further areas of research.

1.7   Summary

This chapter opened by providing historical overview of non-medical prescribing in the United Kingdom, and the detail of the different prescribing qualifications and the scope they give prescribers sets the context for understanding the legal scope and definition of prescribing roles (other than doctors and dentists) in the UK. This was followed by presenting my position as a researcher, the rationale for conducting this research and an overview of how this study is organised. The next chapter will present an analysis of the current research of prescribing in the UK and the development of the research problem, aim and objectives.

Chapter Two

LITERATURE REVIEW

2.1 Introduction

The purpose of this literature review is to analyse current research into the practice and experience of prescribing practitioners in the UK and what is currently known through the existing body of research. The literature is discussed in terms of identified themes, noting the methodology and methods used. The search strategy is outlined detailing the inclusion and exclusion criteria. An integrative literature review not only examines what is known but will identify the gaps in knowledge (Baumeister and Leary, 1997) giving this research focus. This review specifically analyses quantitative, qualitative and mixed methods papers that are primary research and have studied the practice and experience of prescribers. Papers are included from 2006 onward. While this is a long timeframe, it accounts for literature published since the advent of independent prescribing as it currently exists. The purpose is to give context to any changes – improvements or problems – that are defined in the findings of this paper. The relevant areas of practice and experience are defined below. This literature review includes all prescribing professions and areas of clinical practice. Many papers in the currently available literature focus on one or two professions, or on a specific area of prescribing practice.

2.2 Definition of terms

Practice of prescribing practitioners is defined by the researcher as actively writing prescriptions, scope of prescribing, implementation of the prescribing qualification, choosing not to or being unable to use the qualification, and the legal parameters that define the different prescribing roles. Non-practising prescribers are included to explore the perspective of clinicians who qualify as an independent, supplementary or community prescriber but do not prescribe. It excludes how prescribers make their

prescribing decisions, accuracy of decision-making or related clinical decision making. Although those factors are part of prescribing practice, the scope of this study is unable to accommodate those aspects satisfactorily, so the question is focused on the defined areas given above.

Prescribers' experience is defined by the researcher as how the prescribing professionals feel about their prescribing role, how they perceive their colleagues' attitudes and interact with them, how the role has changed their practice, and what challenges and facilitators they find in relation to their prescribing role. This includes their own perceptions and opinions about their prescribing role.

Prescribing practitioners in the UK are those healthcare professionals who have completed either the V300, V150 or V100 qualification and been annotated on their register as an independent, supplementary or community prescriber by their regulatory body.

Community Prescribers refers to those who hold one of the community prescribing qualifications (V150 or V100) not to the location of their work. Many independent and supplementary prescribers (V300) do work in the community, but the key point is the qualification held. Location of practice is a separate matter.

In this study, the term prescribing practitioners or prescribers are used interchangeably as collective nouns, rejecting the preceding (and still commonly used) term "non-medical" because that defines nurse, midwife, pharmacist, podiatrist, radiographer,

dietitian and paramedic prescribers by what they are *not* – doctors or dentists. (This applies to optometrists also, although they are not within the scope of this study.) The distinction between doctors and dentists and other prescribing professions has served well to highlight nurses, pharmacist and AHP prescribers as a new phenomenon. As the novelty of practitioners other than doctors prescribing recedes, this distinction is less useful than it was. While other professions have been recently legally enabled to undertake prescribing education, "non-medical" prescribing itself is a well-established phenomenon. However, the language used in the research papers (non-medical prescribers/prescribing) is used throughout the literature review to avoid misrepresentation, therefore the still commonly used term non-medical prescrib* was an important search term.

2.3   Search strategy

A literature search was carried out initially in 2017, then again in 2018, in late 2019 and most recently in November 2023. The most recent search did highlight newly published research from late 2019 and early 2023 which was consistent with the previous searches. The five papers identified in the most recent search have not been integrated into the main literature review but are discussed in section 2.8 in this chapter. This literature search focussed on English language literature through the on-line databases Academic Search Complete, CINAHL Complete, MEDLINE and SocINDEX as these are the main health related databases. Boolean operators were used to capture and filter the appropriate literature (Gerrish & Lathlean, 2015; Greenhalgh, et al., 2019) by focusing on key terms. See Table 3 for search terms used.

Table 3: Search terms with Boolean operators and limiters

Non-medical prescrib*
nurs* or midwif* or physiotherap* or pharmac* or podiat* or radiog* or allied health profession* dieti* or paramedic
experiences or influences or constraints or barriers or challenges or support or oppotunit* or facilita* competen*
Boolean/Phrase Full text 2006 – May 2020 English Language UK and Ireland Human PDF Full text

Different timelines were applied for allied health professional prescribers than those set for nurses and pharmacists. Searches for literature around nurse, midwife, pharmacist, physiotherapist and podiatrist had a date parameter set from 2006 to present because 2006 was when the restriction of the nurses' formulary was lifted and full independent prescribing as it is now practised, began. Initially this was for nurses and pharmacists. Physiotherapists, and podiatrists gained independent prescribing rights later but had supplementary prescribing rights in 2006 (DH, 2012a, 2012b; Human Medicines (Amendment) Regulations (2013). Therapeutic radiographers were given the right to independent prescribing status in 2016 (Human Medicines (Amendment) Regulations (2016). For dietitians and paramedics specifically, the search dates were set from 2016 and 2018 respectively to avoid opinion pieces in anticipation of their prescribing roles. Dietitians have been able to undertake prescribing courses and practice as supplementary prescribers since 2016 (NHS England 2016a, 2016b; NHS Scotland 2016). Paramedics, unlike other professions, started their prescribing life as independent prescribers. For this reason, separate searches were done; the first included nurses, midwives, pharmacists, physiotherapists, podiatrists and radiographers. The second was

for dietitians, and the third was for paramedics. Additional papers where sourced by reverse snowballing, that is, reading through the reference lists of papers identified by the electronic literature search.

Titles were read and abstracts scanned during the search process and papers were selected on the basis of relevance to the research question. If further clarity were needed, the abstract was read fully at this point, or the researcher erred on the side of inclusion. Although exact duplicates are removed by the databases, non-exact duplicates were identified and removed (examples of why this happens are when two words are transposed, or a small word in the title is altered). Also removed were papers that were outside the UK or were not related to prescribing – these papers were largely profession specific but in areas of clinical practice other than prescribing. The abstracts of the remaining papers were reviewed, and this elicited the removal of papers that did not meet the inclusion criteria (see Table 4 for inclusion/exclusion criteria). The remaining full texts were read, resulting in the removal of papers that did not meet the inclusion criteria, or the definition of prescribing practice set by the researcher in section 2.2, or papers that did not satisfy CASP criteria sufficiently; for example, of little or no methodological information was given, or reporting of results was scanty. Finally, *n*33 papers were selected finally for examination in the literature review. Relevance to the research question was critical in selecting the final papers for inclusion. Appendix 2 shows a PRISMA flow chart illustrating the process of selecting papers for inclusion in the literature review. Where full text papers were excluded, the reasons for exclusion are in line with the exclusion criteria given in Table 4. Baumeister and Leary (1997) identified that it is necessary to have clarity about inclusion/exclusion criteria of papers

in the review to avoid potential researcher bias. They warn that, without this, the researcher may fail to anticipate what the gaps in knowledge may be, and if focused on what they presume the gaps are, could have an unbalanced literature selection to support their assumptions, unwittingly missing significant papers. Similarly, Machi and McEvoy (2016) warn that researchers are likely to have opinions about the field of study and advises that examination of their opinions is necessary. In this study, this is achieved through a process of reflection and use of critical appraisal tools. The inclusion and exclusion criteria in Table 4 aim to exclude unwitting bias.

Table 4: Inclusion and exclusion criteria with rationale

Inclusion	Exclusion	Rationale
Published 2006 or later	Published 2005 or earlier	Fully independent prescribing started in the UK in 2006.
Full Article available	Full article not available	Need to evaluate full text for relevance
English Language	Not written in English	English speaking researcher
UK or Northern Ireland	Outside UK and Northern Ireland	Relevance to the research question
NMPs focused on the research	NMPs incidental or not included in the research (e.g., participants stakeholders, patients or managers, not NMPs)	Relevance to the research question.
Qualified NMPs (V300, V100 or V150 qualifications held)	NMP students	Relevance to the scope of research question
Primary or secondary research meeting CASP criteria	Articles or opinion pieces.	Rigour of literature review.
Information about all stages of research	Lacking relevant information about several stages of the research (not fully meeting CASP criteria)	To allow critical analysis of the selected papers.
Qualified Independent and Supplementary prescribers (V300 qualification) and Community prescribers (V100 or V150 qualification)	Optometrists	Optometrists in the UK can undertake independent prescribing, but this is not V300 qualification.

These criteria were set to be in line with the research question, aim and objectives. Although education and its suitability has been reviewed and reported in some research in investigating how well it prepares students for practice as prescribers, the remit of this research focuses on the practice of qualified prescribers, not the experiences of students.

Consideration was given to the hierarchy of evidence in selecting papers. Although Cochrane criteria for systematic reviews is a gold standard (Higgins et al., 2019) this review is not a meta-analysis or meta-synthesis systematic review. As stated by Sackett et al. (1996) meta-analysis and randomised controlled trials (RCT), the gold standards for quantitative research (Greenhalgh, 2010), are not the be-and-end-all in robust evidence of all research; it is necessary that the best evidence is appropriate to answer the research question. The traditional hierarchy of evidence (Ingham-Broomfield, 2016; Diaz, et al., 2019) is not suitable for this study because it gives low ranking to qualitative research, as though they are of worse quality, when in fact they cannot be assessed by the same criteria as quantitative research. However, Noyes et al., (2022) point out that Cochrane has guidance on synthesising qualitative research in literature reviews. Daly, et al. (2007) propose a different hierarchy from the traditional one, acknowledging the contribution and worth of qualitative research without attempting to compare it to quantitative research. They rank qualitative research as generalisable, conceptual, descriptive and single case study (Daly, et al., 2007 p45) which they based on sampling, data collection and data analysis. However, this may not be completely useful. Terms like 'generalisable' are associated with quantitative data in vocabulary and meaning and does not translate well to qualitative data. As Dixon-Woods et al. (2004) point out, a consensus about the hierarchy in qualitative research has not been reached.

2.4   Review Methodology

This literature review is an integrative appraisal of the qualitative, quantitative and mixed methods research relevant to this study. Given the profile of different methodological approaches of the research in this review, an integrative review has

been selected as the appropriate method to give a comprehensive analysis of what is currently known about prescribing in the UK. The strength of an integrative review is that it includes multiple methods, and the equality it gives to different methods avoids heavily favouring quantitative research and hierarchy generally (Whittemore & Knafle, 2005). The result is a synthesis of the knowledge to date around a particular topic or phenomenon, and integrative reviews are used for this reason in healthcare research (Bowden & Purper, 2022; Cronin & George, 2023). The aim, and one of the functions of an integrative review, by examining a particular phenomenon, is to identify areas for new research (Torraco, 2016). Therefore, this literature review provides the foundation to demonstrate what the gaps in the current literature are, thereby informing the research question and an appropriate methodological approach and design.

2.5   Appraisal of Literature

There was near equal representation of quantitative (*n*13) and qualitative (*n*14) papers, and just (*n6*) mixed methodology papers. The different methods used in the appraised papers each needed an appropriate method and tool to critically appraise them (Fàbregues, Molina-Azorin & Fetters, 2021).

2.5.1 Summary of Quantitative Data

Large studies with quantitative data examined the scale of prescribing practice. The studies mostly looked at one specific profession. Most of these included nurses only in their studies (Courtenay, Carey & Burke, 2006; Courtenay & Carey, 2008; Wilson et al., 2012; Drennan, Grant & Harris, 2014; Smith, Latter & Blenkinsopp, 2014; Nimmo, Patterson & Irvine, 2017; Tatterton, 2017; Barker-Begley, 2019). McCann et al. (2011)

focused on pharmacists. A few compared nurses and pharmacists (Latter, et al., 2011; Gumber, Khoosal & Gajebasia, 2012). Within the single profession studies, a few also focussed on a specific clinical area, such as prescribing opioids (Nimmo, Patterson & Irvine, 2017); children's hospice (Tatterton, 2017); human immunodeficiency viruses (HIV) (Barker-Begley, 2019); critical care outreach (Wilson et al., 2012); primary care (Drennan, Grant & Harris, 2014) or one particular feature, such as continuous professional development (CPD) (Smith, Latter & Blenkinsopp, 2014).

No studies to date have included every prescribing profession in their sample, although a few were open to them all. One study (Courtenay, Carey & Stenner, 2012) was open to all the professions that were eligible to prescribe at the time, but this was within one area health authority, not UK-wide and no midwives were known to be in the sample. Out of n883 respondents, n8 were AHPs, n36 were pharmacists and the remaining n826 were nurses. There were a small number of participants (n13) who did not identify their profession, so it is unknown if any were midwives. This was the same situation with the paper by Courtenay et al. (2017) which was open to all prescribers, but no midwives responded, as well as Courtenay et al. (2018) which did not include podiatrists or midwives. Other large sample papers included fewer professions in their samples.

A study by Courtenay, Carey and Burke (2006) and another by Courtenay and Carey (2008) were both UK-wide but included nurses only. A few studies included the views of stakeholders and patients and their experience and opinions of prescribing, but that is beyond the remit of this research. These papers were included to extract the data of the prescribers' perspective. Overall, these papers focus on the influences on prescribing

practitioners. For the evaluation of quantitative papers, the Joanna Briggs Institute tool (JBI, 2017a) and the CASP tool (2018a) were each considered. JBI (2017a) has six questions focussing on the sample, objectives, confounding factors. The CASP (2018a) tool was not limited in the same way and therefore was used in appraising the quantitative papers included in this literature review.

2.5.2 Summary of Qualitative Data

The qualitative studies explored the experience of prescribing practitioners of a specific profession. Of the *n*14 qualitative papers, *n*7 had a sample of nurses only. These included three papers looking at community nurses only (Downer & Shepherd, 2010; Herklots, Baileff & Latter, 2015; Charter, Williams & Courtney, 2019) one on mental health nurses (Dobel-Ober, Bradley & Brimblecombe, 2013) and the others on nurses generally (Daughtry & Hayter, 2010; Bowskill, Timmons & James, 2012; Scrafton, McKinnon & Kane, 2012). One included only pharmacists in their sample (McCann et al., 2012) and two papers compared nurses and pharmacists (Brodie, Donaldson & Watt, 2014; Maddox et al., 2016). One paper focussed only on paramedics (Stenner, van Even & Collen, 2019). The remaining papers included multiple professions and were topic focussed, such as prescribing antibiotics (Rowbotham et al., 2012) and CPD and implementation of prescribing (Weglicki, Reynolds & Rivers, 2015; Courtenay et al., 2018).

Use of semi-structured interviews was favoured in most studies, with one using a focus group in addition to semi-structured interviews as part of their multi-method qualitative paper (Rowbotham et al., 2012). The perceptions of prescribing practitioners on how

they were viewed, their experiences of working as a prescriber (such as increased workload) and what factors influenced them in their prescribing practice were central to qualitative research overall. The qualitative research was analysed using the CASP (2018b). CASP is detailed and is explicit (Daly et al., 2007). The JBI (2017b) analysis tool was considered, but although the questions in both tools are very similar, CASP (2018b) asks if the qualitative design is appropriate, which JBI (2017b) assumes. Furthermore, using CASP (2018a; 2018b) for analysis of both quantitative and qualitative studies gives consistency in the standard of the tools used.

2.5.3 Summary of Mixed Methods Data

Three of the five mixed-methods papers had clearly defined areas of inquiry; these were continuous professional development (CPD) (Green, et al., 2009) barriers to practice, and self-efficacy (Cope, Tully & Hall, 2020). One focused on the experience of pharmacist prescribers (GPhC, 2016), one compared included nurses and pharmacists (Hindi et al., 2019) and one focussed on the experience of mental health nurses (Ross & Kettles, 2012).

In terms of study design, three used mixed methods questionnaires (GPhC, 2016; Hindi et al., 2019; Cope, Tully & Hall, 2020). One used explanatory sequential (Ross & Kettles, 2012). The final paper used a mixed methods survey and conducted interviews with the stakeholders (Green, et al., 2009). It is unclear if this was a sequential or consecutive design.

For the mixed method papers, appraisal was guided by MMAT (Hong, et al., 2018). ETMM (Long, et al., 2002) was rejected as the questions it asks were not as specific as the MMAT (Hong, et al., 2018) tool.

2.6   Critical Overview of the Literature

This section gives an overview of different aspects from a critical view, as well as critical comment on individual papers in the given themes. The literature was appraised using CASP for the papers with quantitative (CASP, 2018a) and qualitative data (CASP, 2018b) and MMAT (Hong, et al., 2018) for the papers with mixed-method designs. This section gives an overview of how the papers fulfilled sections of the analysis tools according to the quality markers for quantitative, qualitative, and mixed methods research designs.

2.6.1   Recruitment and Sample

Both CASP appraisal tools (2018a and 2018b) consider appropriate recruitment strategy. This has implications for the final sample, both in terms of size and appropriate representation of the population. Brodie, Donaldson and Watt (2014) carried out semi-structured interviews with n4 nurses and n4 pharmacists in relation to benzodiazepines. The method of recruitment is not clear from the information given. Weglicki et al.'s (2015) published paper similarly did not specify recruitment method. Their sample participated in either semi-structured interviews or a focus group, which was appropriate for the phenomenological approach. However, no explanation was given for the inclusion of n1 pharmacist technician when pharmacist technicians are not eligible to prescribe in the UK. This is perplexing, given the study examined the CPD needs of

those with prescribing responsibility. However, in presenting examples of quotes in the findings, nothing was included from the pharmacy technician.

Courtenay et al. (2018) acknowledged that the expert panel for their eDelphi study was composed mostly of nurses, so pharmacists and AHPs were under-represented. Another limitation is that most of the expert panel worked in secondary care, hospital inpatient or outpatient settings, so experiences of clinicians in other settings were not represented in the same way. Similarly, Maddox et al. (2016) used purposive sampling to investigate nurse and pharmacist prescribers. They had mostly n15 nurses and n5 pharmacists participating in interviews, followed by n10 nurses in a focus group. It was unclear why there was such an imbalance, especially as the sample was drawn from primary and community care across England. Charter et al. (2019) also used purposive sampling; they acknowledged that this method led to excluding those who were not prescribing.

McCann et al. (2012) undertook semi-structured interviews with pharmacist independent prescribers. They used purposive sampling, identifying the participants by identifying a range of characteristics, such as prescribing status and type of prescribing undertaken, clinical area of practice, frequency and volume of prescribing in order to appropriately fulfil the study aims. A self-reported limitation was that the authors said this was a small study, however, the sample size was appropriate for a qualitative study. Rowbotham et al. (2012) used semi-structured interviews and focus groups to examine the prescribing (or not prescribing) of antibiotics in primary care for self-limiting respiratory tract infections. A reported limitation was the fact that the focus group was

undertaken as part of a training exercise so may have introduced a degree of bias in terms of the participants motivation. However, detailed their comparison with previous literature supported their results.

2.6.2   Response Rates

It is a mark of quantitative data that the sample size is calculated to give the required reliability and confidence level. Smith, Latter and Blenkinsopp (2014) only 52% of community nurses who participated, which they acknowledged meant, to an extent, generalisability was compromised. Nimmo, Paterson and Irvine (2017) sent a questionnaire to all the nurse independent prescribers (*n*147) in one Scottish health board, with a low response rate at 46% (*n*68) and these were recruited from one health authority, so the results are informative but generalisability is compromised.

Green et al. (2009) sent a postal questionnaire to a cohort of *n*270 NMPs with telephone interviews to *n*11 stakeholders to assess the continuous professional development (CPD) needs and what was actually available to them. A low response rate of 23% to the questionnaire was received. Gumber, Khoosal and Gajebasia (2012) sent questionnaires to the *n*24 NMPs working in mental health care in one Trust (total population) with a response from *n*18 nurses and *n*2 pharmacists. Although this is a small sample, so lacks generalisability, this study served well as an audit for the Trust.

Hindi et al. (2019) conducted a survey to capture qualitative and quantitative data. They declared a low response rate; the participants were *n*24 patients, *n*20 nurse and

pharmacist IPs and n26 colleagues. Sampling included independent prescribers giving questionnaires to their colleagues, so that could potentially introduce a bias.

Dobel-Ober, Bradley and Brimblecombe (2013) recruited n10 nurse prescribers within one Trust to participate in semi-structured interviews one month after receiving their formularies, and six months after receiving them. This sample worked well for a service evaluation and, while generalisability is not a marker of qualitative research, they acknowledge that the very local nature of study could pose a limitation. Downer and Shepherd (2010) interviewed n8 DNs from one HEI across two area health authorities. Courtenay and Carey (2008) elicited a high response of n1377 complete questionnaires (69% response rate).

Similar to Dobel-Ober, Bradley and Brimblecombe (2013) and Nimmo, Paterson and Irvine (2017), the study by Weglicki, Reynolds and Rivers (2015) recruited their participants from one HEI, so may not represent the experience of those who attended other HEIs and had different education experiences. Cope, Tully and Hall (2020) had n99 valid responses to the questionnaire; the total population (NMPs working in Acute Medical Units) is unknown, but the researchers felt the response rate was low, as they identified n225 AMUs in the UK.

2.6.3 Analysis

CASP (2018a) identifies the need to take account of factors in the study design and data analysis. CASP (2018b) also examines data analysis, taking note of the analytical

approach used. The MMAT (2018) tool asks if the component parts of the mixed methods study adhere to the quality criteria of each tradition.

Herklots, Baileff and Latter (2015) declared that they had a small sample, which was reasonable for a qualitative study, however, a saturation was not achieved in all themes. Whether this could have been addressed by deeper analysis or more participants, is unclear. Ross and Kettles (2012) examined prescribing by nurses in mental health settings in an explanatory sequential design by questionnaire with a small sample size (n33). A limitation of this study is that, while Ross and Kettles (2012) identified multiple themes, they were unable to investigate all of them, due to time restraints. It is not clear what the unexplored themes are. Cope, Tully and Hall (2020) defined self-efficacy as the confidence of the individual prescriber in their ability, skill and knowledge. Their findings showed that the longer the clinician had held their NMP qualification, the higher their confidence. Other possible variables influencing confidence were not fully explored.

2.6.4 Results

Both CASP appraisal tools (2018a and 2018b) consider how results are presented and the clarity of findings. The MMAT (2018) tool, while it focusses on the method of integration in various mixed method designs, considers the interpretation of results and the relationship between qualitative and quantitative results.

Courtenay and Carey (2008) had a self-reported limitation of this quantitative study is that participants had been qualified for two years or more, and the authors felt that it would have been useful to have elicited what barriers were faced in the last six months.

This is because the barriers that may have existed 2 years or more previously could have been resolved. This would not necessarily be reflected in the participants' responses but may have shown very recent or current barriers, and possibly a trend of barriers being resolved or, conversely, unchanged. Bowskill, Timmons and James (2012) interviewed *n*26 nurse IPs in primary and a wide variety of clinical areas in secondary care about integrating their prescribing into their clinical practice. Results were reported clearly and in detail, so was a strength in this paper. Daughty and Hayter (2010) felt the**ir** study into nurse prescribers' experiences would have been stronger had they also interviewed GPs and other clinical colleagues to add a different perspective.

Stenner, van Even and Collen (2019) undertook a qualitative study. They have highlighted experiences of some of the first paramedic prescribers qualifying in the UK. They acknowledge that the door is open for larger studies, and studies with a different focus, such as economic impact, or outcomes of paramedics working in different clinical settings. Scrafton, McKinnon and Kane (2012), in their quantitative study, do not explain why their participants were so restricted six years after independent prescribing was first brought in.

The two following examples show some differences in how results were presented or the depth of investigation. With regard to newly qualified prescribers, some papers identified if they asked for length of prescribing experiences, but many papers did not. Those who did ask did not always explore the experience of being newly qualified, or the phenomenon in question from the point of view of the newly qualified prescriber. Courtenay, Carey & Stenner (2012) had *n*50 (5.7%) newly qualified prescribers in their

sample, but the findings did not reflect their data vs more experienced prescribers. Courtenay et al. (2017) had *n*4 (1.1%) newly qualified prescribers identified in their sample, but similarly to Courtenay, Carey & Stenner (2012) the experience of the newly qualified was not differentiated. Bowskill, Timmons & James (2012) participants in their qualitative study had between 7- and 26-months prescribing experience. This range was not broken down further.

Considering the experience of those who have qualified but never prescribed, most papers did not address this or distinguish between those who have never prescribed and those who have prescribed but stopped. Chater, Williams and Courtenay (2019) used purposive sampling, which was done to select only those who were actively prescribing, so the views and experiences of those who chose not to or could not use their prescribing qualification were not addressed.

2.7 Theme Development

Once the search was complete, all the selected papers for inclusion/exclusion were re-read and summarised on the data extraction chart (Appendix 3). This tool was used to summarise key elements of each paper, and by focussing on their method, results and conclusions, it was possible to clearly identify recurring themes in the current literature (Aveyard, Payne & Preston 2016). The data extraction also indicates the themes each paper contributed to as presented in this literature review.

The recurring themes found in the literature were:

- Professional relationships

- Organisational influences

- Continued Professional Development (CPD)

- Confidence

- Newly qualified prescribers

- Not prescribing

The themes were identified through frequency of occurrence in the literature, demonstrating what has been studied to date. The critical analysis of these themes and the findings of the papers demonstrate what is currently known and where there are gaps in knowledge.

2.7.1 Professional Relationships

The discussion and exploration of relationship with peers and managers has been addressed frequently in literature. The influences of those relationships on prescribers and their practice have been identified in terms of what has either helped or hindered them in their progress as prescribers. In this theme there are five quantitative papers (Courtenay and Carey, 2008; Gumber, Khoosal and Gajebasia, 2012; Smith, Latter & Blenkinsopp, 2014; GPhC, 2016; Barker-Begley, 2019) five qualitative papers (Daughtry & Hayter, 2010; McCann et al., 2012; Brodie, Donaldson & Watt, 2014; Herklots, Baileff & Latter, 2015; Stenner, van Even & Coller, 2019) and two mixed methods papers (Ross & Kettles, 2012; Hindi et al., 2019). All papers noted the effect the professional relationships had on prescribing roles.

One of the papers published on nurse independent prescribers and nurse supplementary prescribers soon after full independent prescribing rights were

introduced was by Courtenay and Carey (2008). This seminal paper is a useful barometer for changes and progress since then, including which barriers and facilitators have changed, disappeared or remained. The purpose of the survey was to report an overview of nurse independent and supplementary prescribing in the UK. A random sample was drawn from the NMC database. They elicited a high response of n1377 complete questionnaires (69% response rate) which supported the generalisability of their findings. The barriers to prescribing practice identified were objections by medical staff and non-prescribing pharmacists, restrictive local organisational issues. Supplementary prescribers particularly were restricted by lack of support from doctors - a doctor is required to sign as the independent prescriber on a clinical management plan (CMP) for each patient, which enables a supplementary prescriber to prescribe. A self-reported limitation of this study is that participants had been qualified for two years or more, and the authors felt that it would have been useful to have elicited what barriers were faced in the last six months as they acknowledge barriers that may have existed 2 years or more previously could have been resolved. This would not necessarily be reflected in the participants' responses.

Lack of support of the prescribing role from peers and doctor disapproval was also reported by McCann et al. (2012) who undertook semi-structured interviews with pharmacist independent prescribers. They used purposive sampling, identifying the participants by identifying a range of characteristics, such as prescribing status and type of prescribing undertaken, clinical area of practice, frequency, and volume of prescribing. Challenges included some doctors being unreceptive to pharmacist prescribing practice, on the grounds of professional encroachment. Where there was

effective communication, the multidisciplinary team (MDT) was important in facilitating NMP practice. Ross and Kettles (2012) examined prescribing by nurses in mental health settings in an explanatory sequential design by questionnaire with a small sample size (*n*33) and a focus group (*n*12). A barrier to prescribing was identified as lack of support and perceived role conflict, a finding that concurred with Courtenay and Carey (2008) and McCann et al. (2012). Ross and Kettles (2012) showed that their sample demonstrated 21% lacked self-confidence. Satisfaction at the level of support received was expressed by just 33% of the sample. A limitation of this study is that, while Ross and Kettles (2012) identified multiple themes, they were unable to investigate all of them, due to time restraints. It is not clear what the unexplored themes are.

Daughtry and Hayter (2010) used (*n*8) semi-structured interviews with prescribing practice nurses. Expectations from colleagues, while not altogether negative, showed there was some misunderstanding of the practice of nurse prescribers. Despite this, their findings showed that most doctors were supportive of the prescribers' new roles. In fact, many participants reported that GPs were quick to delegate to them. The nurse participants reported that a few GPs had reservations about nurse prescribing, but they did not experience the extent of disapproval found by Courtenay and Carey (2008) and McCann et al. (2011). A self-reported limitation was that the authors said this was a small study, but the sample size was appropriate for a qualitative study. However, Daughty and Hayter (2010) felt the study would have been stronger had they also interviewed GPs and other clinical colleagues.

There was a noticeable change in what was reported in the literature post 2012. The papers from 2008–2012 were reporting professional relationships and colleague disapproval that had a negative effect on prescribing roles. From 2014, papers were reporting either a mixture of responses from colleagues or much more positive, supportive professional relationships.

Gumber, Khoosal and Gajebasia (2012) sent questionnaires to the n24 NMPs working in mental health care in one Trust (total population) with a response from n18 nurses and n2 pharmacists. Although this is a small sample, so lacks generalisability, this study served well as an audit for the Trust. They made an interesting point that these NMPs met the UK Standards (DH 1989 cited in Gumber, Khoosal and Gajebasia (2012) except for supervision. They draw the conclusion that newly qualified NMPs are not receiving any supervision and therefore a national standard is not being met. However, according to the second Crown report (DH 1999) it is arguable that supervision is not set as a *post*-qualification standard [bold lettering researcher's emphasis]:

*"…all **training** should include a period of supervised practice"* (DH, 1999 pp 66).

Education for the NMP qualification includes a minimum amount of direct supervision which must be met in order to qualify. There is some lack of clarity about the level of supervision that Gumber, Khoosal and Gajebasia (2012) considered is not being met or if they mean post-qualifying supervision. While their study comments on the standards prior to 2012, post-qualifying supervision was not and is not a set standard. This is

relevant in light of the value that is placed on supervision by prescribers. The study by Gumber, Khoosal and Gajebasia (2012) highlights a need that is perhaps not being met.

Smith, Latter and Blenkinsopp (2014) reported their results in a survey of *n*840 nurse NMPs and *n*87 prescribing leads in England. Of the nurse IPs who were prescribing, 77% felt supported and most of those had regular supervision and access to an experienced prescriber. Only 52% of community nurses who participated, which they acknowledged meant generalisability was compromised, however, reported an adequate level of support and opportunities for development. In a qualitative study, using semi-structured interviews for a cohort of community matrons (*n*7), Herklots, Baileff and Latter (2015) had mixed experiences in whether support and trust from their GP colleagues was available or absent. All participants identified this as having a direct impact on their prescribing practice. They declared that they had a small sample, which was reasonable for a qualitative study, however, a saturation was not achieved in all themes. Whether this could have been addressed by deeper analysis or more participants, is unclear. The General Pharmaceutical Council (GPhC, 2016) cited difficult working relationships and poor acceptance from colleagues, but many of these said this was worse when newly qualified and did appear to improve over time with experience.

Barker-Begley (2019) issued an anonymous questionnaire to nurses specialising in HIV care, comparing their need for support and education at a two-year interval. Nurses *n*22 responded in 2015 and *n*29 nurses responded in 2017 (100% response in both years) and the nurses reported a greater level of support from their colleagues in 2017. However, it is unknown by Barker-Begley (2019) if any of the 2017 sample had been part

of the 2015 sample. Hindi et al. (2019) conducted a survey to capture qualitative and quantitative data. They declared a low response rate; the participants were patients (*n*24), nurse and pharmacist IPs (*n*20) and colleagues (*n*26). Sampling included independent prescribers giving questionnaires to their colleagues, so that could potentially introduce a bias. This survey identified that colleagues' lack of awareness of their prescribing role could be limiting, as they showed lack of confidence in their newly qualified prescribing colleagues. However, when colleagues understanding of the NMP role was established, this was a positive facilitator to teamwork and supporting the prescribing role and effectively managing workload.

Brodie, Donaldson and Watt (2014) carried out semi-structured interviews with (*n*4) nurses and (*n*4) pharmacists in relation to benzodiazepines. The method of recruitment is not clear. Time and education were obstacles to their practice, while support from the medical team facilitated their roles as NMPs. A major theme identified was the necessity of communication around the prescribing role for optimal development, especially as the participants reported feeling their skills were under-used. Bowskill, Timmons and James (2012) interviewed *n*26 nurse IPs in primary and a wide variety of clinical areas in secondary care about integrating their prescribing into their clinical practice. Results were reported in detail. In both primary and secondary care, trust and communication with peers and experienced prescribers was crucial to the support and confidence of the NMP. This was reported to have a direct impact on the decision to prescribe or not.

Stenner, van Even and Collen (2019) used interviews in an exploratory qualitative study of the experiences of some of the first paramedics to qualify as independent prescribers

in the UK. As a qualitative study, they have highlighted experiences of some of the first paramedic prescribers, acknowledging that the door is open for larger studies, and studies with a different focus, such as economic impact, or outcomes of paramedics working in different clinical settings. Experiences of managing colleague expectations were similar to those reported by nurses (Daughtry & Hayter, 2010) where there was an expressed lack of understanding of their new prescribing role. However, although it is early days for paramedic independent prescribers, this study indicates that the paramedics perceived greater acceptance and support for their prescribing roles than there was in the early days of nurse independent prescribing (Courtenay & Carey, 2008).

There is agreement in the literature that the attitude and support – or lack of support – from peers and managers can have a significant effect on how an NMP feels in their role as a prescriber. There is some indication that the impact on confidence and volume of prescribing may be significant. Recent paramedic experience indicates that they are not facing the level of resistance that nurses did in the first six years of independent prescribing.

2.7.2 Organisational Influences

An initial driving force for NMP prescribing and the inclusion of multiple professions was, and remains, economic value and timely care (DHSS, 1986; DH, 1989). Thirty-five years later, more professions have been given the right to prescribing education. However, organisational polices and technological systems can sometimes be a barrier for prescribers. This theme includes two quantitative papers (Courtenay & Carey, 2008;

Courtney, Carey & Stenner, 2012) and five qualitative papers (Downer & Shepherd, 2010; Scrafton, McKinnon & Kane, 2012; Dobel-Ober, Bradley & Brimblecombe, 2013; Courtenay, et al., 2018; Stenner, van Even & Coller, 2019).

Computer systems that were not ready to accommodate them and caused delays to NMPs starting to prescribe, and local policies were not adapted promptly to support and guide NMPs (Courtenay and Carey, 2008). These delays were still reported to be an issue over the next four years. Downer and Shepherd (2010) interviewed n8 district nurses (DNs) from one higher education institute (HEI) across two area health authorities. They had been qualified independent prescribers for a minimum of 12 months. Access to computers rather than outdated IT systems was a restricting factor. However, unprepared IT systems were still causing significant delays for newly qualified paramedic prescribers (Stenner, van Even & Coller, 2019).

Another organisational influence in the literature is that of local restricted formularies. Scrafton, McKinnon and Kane (2012) identified that the main barrier was that, at the time, nurses' scope was limited to the *Nurses' Prescribing Formulary* (NPF) regardless of their skill, experience and area of practice. This was a cross-sectional qualitative survey with n6 nurses who had all been qualified independent prescribers for over a year, although no demographic details are given so the range of how long the participants had been qualified independent prescribers is unknown. Restrictions imposed by the NPF were lifted in 2006. While the restriction imposed by the NPF was present for several years, Scrafton, McKinnon and Kane (2012) do not explain why their participants were so restricted six years after independent prescribing was first brought in. In contrast,

Dobel-Ober, Bradley and Brimblecombe (2013) found that their mental health nurse participants had used supplementary prescribing for an extended period of time after qualifying. They explored whether the use of personal formularies was supportive in transitioning into practising as an independent prescriber. They recruited *n*10 nurse prescribers within one Trust to participate in semi-structured interviews one month after receiving their formularies, and six months after receiving them. This sample worked well for a service evaluation and, while generalisability is not a marker of qualitative research, they acknowledge that the very local nature of study could pose a limitation. The number of non-active prescribers decreased from *n*8 at the beginning of the study to *n*1 by month 12. The three who had been prescribing as supplementary prescribers at the beginning of the study were all prescribing independently by month six. Nineteen out of the twenty nurses were prescribing independently by month 12. All the participants attributed this increase of prescribing activity to the personal formulary; some had felt it gave them a protected platform to begin prescribing.

One of the factors identified by Courtenay, Carey and Stenner (2012) used a descriptive questionnaire in one strategic health authority was that community nurses and pharmacists received significantly less organisational support (in this case, from the NMP lead) than their secondary care counterparts. While 90% of the participants said they were aware of governance systems to support and guide their prescribing practice, only 37% had access to their own prescribing data. Courtenay et al. (2018) conducted an e-Delphi survey among nurses, pharmacists and allied health professional (AHP) prescribers in Wales. The researchers acknowledged that the expert panel was compose mostly of nurses, so pharmacists and AHPs were under-represented. Another limitation

is that most of the expert panel worked in secondary care, hospital inpatient or outpatient settings, so experiences of clinicians in other settings are not well represented. A total of *n*42 completed the first round, and *n*40 completed the second round.   The focus of the survey was to examine the factors that support the implementation of NMP and identify priorities in achieving efficient and supportive processes. There was a high level of agreement among the eDelphi panel that organisational support and effective processes were found to be necessary in supporting NMP roles. This goes beyond support from colleagues - important and influential though that is. The organisation needs to have clarity on the role of the prescriber and awareness that this is a new level of responsibility, increases workload and complexity.

In summary of this theme, the employing organisation exerts its influence in several ways. Computer systems that were unable to accommodate prescribers or certain professions were delayed in starting prescribing. Inaccessibility of governance systems to support safe prescribing, and lack of organisational clarity on the role of NMPs were cited hindrances. The enforcement of limited formularies on starting to prescribe was seen by some as restrictive and by others as supportive, helping them toward the full scope of independent prescribing.

2.7.3 Continuous Professional Development

CPD has been identified in several research papers as important and influential on NMPs. Three of the papers had this as their main focus (Green, et al., 2009; Weglicki, Reynolds and Rivers, 2015; Nimmo, Peterson & Irvine, 2017) others as an identified theme in their overall research (Brodie, Donaldson & Watt, 2014; Smith, Latter &

Blenkinsopp, 2014; Herklots, Baileff and Latter, 2015; Courtenay et al., 2018). This theme includes three quantitative papers (Smith, Latter & Blenkinsopp, 2014; Nimmo, Peterson & Irvine, 2017; Courtenay et al., 2018) and four qualitative papers (Brodie, Donaldson & Watt, 2014; Herklots, Baileff and Latter, 2015; Weglicki, Reynolds and Rivers, 2015; Courtenay et al., 2018;) and one mixed methods paper (Green et al., 2009).

Smith, Latter and Blenkinsopp (2014) looked at education effectiveness and CPD by surveying NMPs and prescribing leads in England in their cross-sectional survey. CPD was available in most Trusts, although community nurses were found to have less support and development post-qualification. The importance of CPD to the participants (n976) was clearly identified, but the availability varied. In areas where there was low provision of CPD and support, nurses were left feeling vulnerable and unconfident.

Green et al. (2009) sent a postal questionnaire to a cohort of 270 NMPs with telephone interviews to 11 stakeholders to assess the continuous professional development (CPD) needs and what was actually available to them. A low response rate of 23% to the questionnaire was received. Of those that responded 29.3% engaged in CPD, and only 5% of those people were engaged in any prescribing specific CPD. This is a stark contrast to the 51% of all participants who said that CPD and supervision in relation to their prescribing was important.

Participants across several studies identified the reasons they valued CPD as an influence in their prescribing practice. Herklots, Baileff and Latter (2015) used semi-structured interviews in their study and identified that community matrons felt that they

needed CPD to support their role. Although the majority stated their Trusts provided CPD, accessing it was problematic as they were not given any time toward it. Resources such as websites, journals and pharmacist colleagues were used to keep up to date instead. Courtenay et al. (2018) in their eDelphi study, identified priorities in ensuring implementation of non-medical prescribing was as efficient and supportive as possible. This included the need for more consistent provision of supervision and CPD. Nimmo, Paterson and Irvine (2017) sent a questionnaire to all the nurse independent prescribers (n147) in one Scottish health board, with a low response rate at 46% (n68) and these were recruited from one health authority, so the results are informative but generalisability is compromised. The purpose of the survey was to assess the CPD needs of nurses prescribing opioids. Out of all the respondents, 94% felt CPD was necessary because they have a duty of care to stay up-to-date and stay in line with NMC standards. They did comment that some respondents felt the Competency Framework (RPS, 2016) provided a helpful structure for CPD, but this was not explored.

Brodie, Donaldson and Watt (2014) interviewed four nurse and four pharmacist IPs and agree that some mental health practitioners felt isolated as newly qualified NMPs and would value post-qualifying support and CPD. This importance of this was emphasised for the positive impact of education and CPD on their approach to specific aspects of the prescribing role. These aspects are appreciation of medication monitoring, skilful management of concordance and the support of new ways of working in the primary care teams.

In a mixed profession cohort of 16, Weglicki, Reynolds and Rivers (2015) agreed that important methods in supporting new NMPs included peer groups, supervision, and interactive learning environments. Semi-structured interviews and a focus group were carried out. Similar to Dobel-Ober, Bradley and Brimblecombe (2013) and Nimmo, Paterson and Irvine (2017), the study by Weglicki, Reynolds and Rivers (2015) recruited their participants from one HEI, so may not represent the experience of those who attended other HEIs and had different education experiences. Their study agrees that lack of CPD is detrimental to NMP practice. The impact on practice of CPD was perceived to be in supporting the application of theory to practise and in nurturing the confidence needed to practice their prescribing skills. It is acknowledged that this may vary from Trust to Trust but highlights the need to understand local requirements to effectively support NMPs. Similarly, Green et al. (2009) recommend consideration of focusing on NMP for effective CPD as a result of their study.

CPD was overwhelmingly identified as valued by NMPs in staying up to date and safe in their clinical and prescribing practice because there was the recognition that learning does not cease on qualification. The need for CPD sometimes outstrips accessibility, often due to time and financial constraints. When structured CPD was in place, NMPs universally recognised the benefit.

2.7.4 Confidence

Those papers that address confidence directly have developed this discussion. They consist of five quantitative papers (Courtenay, Carey & Burke, 2006; Courtenay & Carey, 2008; Courtenay, Carey & Stenner, 2012; Wilson et al., 2012; Tatterton, 2017) six

qualitative papers (McCann et al., 2012; Rowbothem et al., 2012; Dobel-Ober, Bradley & Brimblecombe, 2013; Herklots, Baileff & Latter, 2015; Weglicki, Reynolds & Rivers, 2015; Maddox et al., 2016) and one mixed methods paper (Cope, Tully & Hall, 2020). The literature addresses mainly what the factors are that affect confidence, also the effect that confidence has on the prescribers' practice.

Herklots, Baileff and Latter (2015) identified that previous experience and clinical knowledge was a significant factor in upholding the confidence of the nurse IPs they interviewed. This supports the findings of Courtenay and Carey (2008) and Courtenay, Carey and Stenner (2012) whose descriptive surveys specified that the longer the clinical experience prior to becoming an NMP, the more secure and confident they felt on qualifying.

Rowbotham *et. al.* (2012) used semi-structured interviews and focus groups to examine the prescribing (or not prescribing) of antibiotics in primary care for self-limiting respiratory tract infections. A reported limitation was the fact that the focus group was undertaken as part of a training exercise so may have introduced a degree of bias in terms of the participants motivation. However, detailed their comparison with previous literature supported their results. The participants were *n*34 nurse independent prescribers, *n*1 physiotherapist and *n*1 pharmacist. Those who were newly qualified NMPs felt they needed to build up their confidence, especially where there was diagnostic uncertainty. Further, the participants identified the wish for CPD to continue building their self-confidence and competence in the face of diagnostic uncertainty, especially those who were relatively newly qualified (but not restricted to them). The

link between CPD and prescriber confidence was also discussed by Weglicki, Reynolds & Rivers (2015). They also used semi-structured interviews with *n*11 nurses, *n*3 physiotherapists and *n*1 pharmacist. They included *n*1 pharmacist technician, but pharmacist technicians are not eligible to prescribe in the UK. This inclusion was not explained. They discussed their findings that prescribers were reporting fear of making a mistake, compounded by vulnerability when CPD was not available. The need to keep up to date and continue their theoretical underpinning for safe prescribing was highlighted.

Wilson *et. al.* (2012) carried out a 4-month audit of *n*2 nurse independent prescribers in a critical care outreach team. This paper was a case study of just two nurses. Case studies, due to their small numbers, are not generalisable but offer insight into the experience, range and complexity of their role (Baxter, 2016). This paper fits the audit criteria of prepare, identify criteria, measure, improve and sustain (Benjamin, 2008). The nurses found auditing of their work served to highlight the complexity of their role and scope of prescribing and felt very positively about the audit and supported in their role. In a cohort of *n*20 mental health nurse NMPs, Dobel-Ober, Bradley and Brimblecombe (2013) identified that the use of personal or team formularies were instrumental in building confidence of the NMPs. It was noted that colleague support was needed; formularies and a confident attitude were not felt to be sufficient. Tatterton (2017) sent an online questionnaire to independent prescribers working in children's hospices. The most highly reported barrier to prescribing was lack of confidence, but reasons for that were not explored in this quantitative paper.

Cope, Tully and Hall (2020) conducted a qualitative cross-sectional survey of NMPs working in medical units. The purpose was to explore their perceptions of self-efficacy and willingness to make prescribing decisions and accept the responsibility that comes with the role. They had *n*99 valid responses to the questionnaire; the total population (NMPs working in Acute Medical Units) is unknown, but the researchers felt the response rate was low, as they identified *n*225 AMUs in the UK. The participants were pharmacists (*n*27) nurses (*n*32) physiotherapists (*n*4) and (*n*32) who did not declare their profession. Self-efficacy is defined by the authors as the confidence of the individual prescriber in their ability, skill and knowledge. Their findings showed that the longer the clinician had held their NMP qualification, the higher their confidence. Other possible variables influencing confidence were not fully explored.

McCann et al. (2012) reported the results of interviewing pharmacists (*n*11) doctors (*n*11) and stakeholders (*n*13). The pharmacists reported that the multidisciplinary team could be very supportive and enhanced practice; some found there was resistance to their new role as an NMP, a finding echoed later by the GPhC (2016) survey. Where their colleagues were supportive, pharmacists felt this as important in their confidence and ability to develop their NMP role. The importance of support and confidence was also reported by Maddox et al. (2016) who interviewed 20 NMPs – nurses (*n*15) and pharmacists (*n*5) and later three focus groups with a total of (*n*10) of nurses (not from the cohort who were interviewed) using purposive sampling. The researchers noted that they had a lot more nurse than pharmacist participants. They also acknowledged that data collection through interviews is subject to the recall of participants and there is the possibility, as in any interview process, that some elements may have been

forgotten. Level of confidence and colleague support was cited as a directly influencing factor on whether they actively prescribed or not.

Looking directly at factors that influence nurse and pharmacist independent prescribers' willingness to prescribe was examined in a series of three focus groups by Maddox et al. (2016). 15 nurse and 5 pharmacist prescribers participated in Maddox et. al.'s (2016) study. The stated range of qualification as an NMP was <6 years to >8 years. The reported influence on their willingness to prescribe was colleagues' perception of their competence and their own self-confidence. The majority reported fear of making a prescribing error and loss of confidence was attributed to lack of support from colleagues. Factors that facilitated prescribing practice were self-confidence in their own competence – highlighting strong adherence to scope of practice – and support from colleagues.

Courtenay, Carey and Burke (2006) surveyed a convenience sample of 868 nurse prescribers. They sent the questionnaire to n1187 nurse prescribers, which was 25% of the registered nurse prescribers at that time. The participants reported an 89% rate of self-confidence. The remaining 11% gave their lack of self-confidence as a reason for preventing prescribing (along with budget constraints and objection by medical staff).

Confidence is complex and dynamic with multiple factors that can change it. All the identified themes can have an influence on an individual's confidence. There are indications of the effect that low confidence can have on an individual and the decisions

they make. The factors that support confidence – experience, teamwork, supervision, continued education/CPD – give a foundation for feeling able to prescribe safely.

2.7.5 Newly qualified prescribers

There is only one study that focussed on newly qualified prescribers, and Stenner, van Even and Collen (2019) whose sample consisted entirely of paramedics in the year after they gained the legal right to undertake prescribing education (Human Medicines (Amendment) Regulations (2018), so were, by default, newly qualified. Other papers were included in this theme only if they had newly qualified prescribers in their sample and/or had specific findings about the experience of being newly qualified. Papers that did not have, or did not specify, inclusion of newly qualified prescribers, and those that had no findings specifically about being newly qualified were not included. The six papers that contribute to this theme are three quantitative papers (Courtenay, Carey & Stenner, 2012; GPhC, 2016; Courtenay et al., 2017) and two qualitative papers (Charter, Williams & Courtenay, 2019; Stenner, van Even and Collen, 2019).

There are obstacles faced by newly qualified prescribers and implementing their qualification is not necessarily straight forward, and for some not possible. Results from the study by Chater, Williams and Courtenay (2019) comprising semi-structured interviews with *n*20 community practitioners reported that delays between qualifying and starting to prescribe can undermine confidence). Some of these nurses held the V300 qualification, some had the community prescribing V100 qualification. Purposive sampling was done to select only those who were actively prescribing, so the views and experiences of those who chose not to or could not use their prescribing qualification

were not addressed. The reasons for delays in commencing prescribing can be practical matters, such as delay in getting prescription pads was noted to be problematic for newly qualified colleagues by one participant in Charter, Williams and Courtenay's (2019) study. While they could not specify how long such delays were for their participants, they clearly stated this was in addition to a lack of confidence some prescribers felt on qualifying. It should be noted that just one of their participants was newly qualified (less than a year) and there was a mean of 10.3 years as a qualified prescriber. However, the experience of being newly qualified was relevant to all participants. Stenner, van Even and Collen (2019) used semi-structured interviews with n18 paramedics and noted they were experiencing delays in starting prescribing due to IT systems that could not recognise their profession as prescribers.

One paper addressed the importance of CPD. While Chater Williams and Courtenay (2019) did not specifically name CPD, their participants commented on the importance of ongoing training, recognising that highly experienced practitioners still have limitations and areas of potential learning. Keeping up to date with changes is seen as important to safe practice.

Five of these papers reported findings on the importance of workplace support and supervision. The GPhC (2016) survey among its pharmacist members reported that supportive workplaces and general support for their prescribing role had a positive effect on their confidence. They described support as a dynamic relationship with the multi-disciplinary team and mentioned skill sharing in recognition that different strengths come from different foundation professions. This finding is echoed by Chater,

Williams and Courtenay (2019) and Stenner, van Even and Coller (2019). Specifically, Chater, Williams and Courtenay's (2019) findings also showed that clinical supervision helped build self-confidence, whether or not this was a formal process or not. Courtenay, Carey and Stenner (2012) asked about levels of support before, during and after the prescribing programme. Their findings show that support was at its highest for newly qualified prescribers but was still just *n*304 (47.8%) of those who answered that question. Five years later, Courtenay et al. (2017) reported that *n*67 (17.7%) did not have an appropriate level of support, and *n*83 (21.9%) did not have continued support in discussing prescribers' experiences on completing their course. Lack of senior and managerial support was cited as a reason for restricting prescribing practice.

Although organisational factors, CPD and colleague support and supervision are themes in their own right in this literature review, they have been highlighted here specifically in relation to how important these factors are to newly qualified prescribers and the effect they have.

2.7.6 Not Prescribing

There are healthcare professionals who have qualified as prescribers but never put their qualification into practice. This has been addressed as part of the findings in some studies, but not as the central focus. Seven papers have contributed to this theme: five quantitative papers (Courtenay & Carey, 2008; Latter et al., 2011; McCann et al., 2011; Drennan, Grant & Harris, 2014; Smith, Latter & Blenkinsopp, 2014) one qualitative paper (Bowskill, Timmons & James, 2012) and one mixed methods paper (Ross & Kettles, 2012).

A national survey commissioned by the Department of Health (Latter et al., 2010) confirmed that, at the time, 7% of nurse prescribers and 20% of pharmacist prescribers were not actively using their qualification. It is not clear if those clinicians had never prescribed or had stopped prescribing. In 2013 there were over 19,000 nurse and midwife prescribers (RCN, 2014). A secondary data-analysis examined nurse NMPs prescribing in England over a 4-year span by Drennan, Grant and Harris (2014). It was taken from ePACT database (electronic prescribing analysis and cost) focussing on nurses in primary care and community care nurses. Drennan, Grant and Harris (2014) were able to identify how many nurses were registered with ePACT and how many were using their prescribing rights. The numbers of prescribing nurses rose by 18% between 2006 and 2010 but remained at around 43% of all primary care nurses with prescribing rights. The limitation of both the Latter et al. (2011) and Drennan, Grant and Harris (2014) studies, is that, while the detail of prescribing activity is precise, it was outside the scope of the studies to explore the reasons for these trends. Further, Drennan, Grant and Harris (2014), being an analysis of secondary data, does not capture data or experience from the nurse prescribers themselves.

In a descriptive questionnaire in one strategic health authority, Courtenay, Carey and Stenner (2012) found that community nurses and pharmacists received significantly less organisational support (in this case, from the NMP lead) than their secondary care counterparts. The convenience sample of *n*590 nurse prescribers, *n*198 pharmacists and *n*35 allied health professionals indicated that *n*133 respondents were not prescribing at all. Fifty-nine of them were community practitioners who had experienced procedural delays, lack of support, and decreasing confidence which had negative impact on their

prescribing activity. The main reason given for not prescribing was change to a non-prescribing job. However, among those not currently prescribing, the proportion of are health care professionals who have never prescribed versus those who have stopped prescribing it is unclear.

Ross and Kettles (2012) examined prescribing by nurses in mental health settings. The research was conducted by questionnaire (*n*33) and a focus group (*n*12). Out of the *n*33 respondents, *n*7 (21%) had not prescribed independently within 12 months of qualifying, and *n*19 (58%) of the respondents had not prescribed independently at all. The main barrier identified by Ross and Kettles (2012) was lack of support from the prescribing lead and from clinical colleagues, which concurs with the findings from Courtenay, Carey and Stenner (2012). Bowskill, Timmons and James (2012) interviewed *n*26 nurse independent prescribers in primary and secondary care about integrating their prescribing into their clinical practice. The participants had qualified as prescribers between 5 and 8 years before the paper was published. Five of them were not prescribing; *n*4 of those had not prescribed at all, while the other had changed job and was no longer in clinical practice. Two cited incompatible computer systems that did not support nurse prescribing and others cited employer restriction as reasons not to prescribe. Change of job was also cited by Courtenay, Carey and Stenner (2012).

The phenomenon of qualified prescribers not actively prescribing was also identified by McCann et al. (2011) who reported that 46% of their participants (pharmacist prescribers) never prescribed, and 6.5% had prescribed but had since stopped. Reasons for not prescribing were: inadequate resources to cover the workload in addition to core

services, lack of prescribing budget and, for those pharmacists who were still supplementary prescribers and had not converted to independent prescribing status, the onerous paperwork and additional work involved in using clinical management plans.

Smith, Latter and Blenkinsopp (2014) reported their results in a survey of nurse NMPs and prescribing leads in England. There were *n*976 nurse NMPs responders and *n*136 were not using their prescribing qualification. There were 18% of responders who expressed dissatisfaction with the level of CPD to maintain safe practice; while 48% stated they did not have post-qualifying supervision or regular appraisal. However, it was not explicit if these are direct reasons for those not prescribing.

Reasons for not prescribing are multiple. Influences such as previous clinical experience, job satisfaction, colleague and organisation support and access to opportunities for CPD all can help a prescriber to embrace the role or reject it. Between these two extremes, a prescriber may avoid complex prescribing decisions that they are capable of or begin to thrive on this complexity. This does include how they think their colleagues perceive them, so confidence can be an internal or external influence in supporting or preventing prescribing. Keeping in mind the cost of education, the cost of reduced clinical hours during education, and a high level of waste through never prescribing, educating people who do not, for whatever reason, never prescribe, is a time and financially expensive exercise.

2.8   New Literature

Since this study was completed, a search for more current literature that falls within the inclusion criteria of the original literature review, with a date range set between January 2020 and October 2023. After excluding duplicates, non-UK papers and those that did not fall within the inclusion criteria, five papers were identified (Alghamdi et al., 2020; Carter, Chapman & Watson, 2021; Graham-Clarke, Rushworth & Marriott, 2021; Graham-Clarke, Rushworth & Marriott, 2022; Harding, et al. 2022). Four were qualitative studies and one was a quantitative retrospective survey (Alghamdi et al., 2020).

Grahame-Clarke, Rushton and Marriott (2021) conducted a three-round Delphi study to compare physiotherapist and pharmacist prescribers and their experience of barriers to and facilitators for their prescribing practice. Their findings showed that there were 29 facilitators in common identified, and just one barrier in common. Key facilitators were knowledge, personal confidence and 17 different aspects of support (examples of these were MDT support, peer support, supervision, learning opportunities). This is in agreement with the findings in this study which found colleague and manager support to be very important, and influential on prescribing practice, and one of the multiple factors that influences prescriber confidence. The one barrier agreed in the Grahame-Clarke, Rushton and Marriott (2021) study was lack of time for development. Harding et al. (2022) interviewed nine prescribers: $n3$ nurses, $n3$ pharmacists, and $n3$ radiographers, focussing on post-qualification training. In common with Grahame-Clarke, Rushton and Marriott (2021) they identified colleague support as important to their prescribing roles, and additionally, ongoing training/education.

Grahame-Clarke, Rushton and Marriott (2022) conducted a follow-up study from their Delphi study (2021), also exploring barriers and facilitators to prescribing practice. They conducted two focus groups: one with n3 pharmacists, the other with n3 pharmacists and n4 physiotherapists. Their findings showed a difference in how the participants viewed their role as prescribers. The physiotherapists found it easier to incorporate prescribing as an extension of their clinical practice, while the pharmacists found it was more of an "add on". This is a new perspective on the role of prescriber, as opposed to the perspective of implementing prescribing into a service. Grahame-Clarke, Rushton and Marriott (2022) also commented on the ACP role and its place in creating a flexible workforce, and the support needed form colleagues to make that possible. Carter, Chapman and Watson (2021) conducted interviews with n6 pharmacists, n5 nurses (all independent prescribers) and n6 GPs and n6 stakeholders and managers, looking at influences on prescribing. Their results did show who the reported responses were from, so this study was included. Influences were the foundation profession of the prescriber, the relationship with the employing organisation, learning opportunities for prescribers, including the value placed on peer support and shared learning.

Alghamdi et al., (2020) conducted a retrospective study to determine the prescribing trends of nurses and pharmacists in primary care in Wales between 2011 and 2018. This showed a rising trend of prescribing by both professions in comparison to other prescribing professionals (excluding dentists). Part of the increase was attributed to the implementation of primary care clusters which were designed to increase access to health services. Their results showed that there were inconsistent prescribing patterns across different health boards, but the reasons for this could not be determined by the

secondary database analysis. This study does show the continued increase in the number of prescribing clinicians, and as the prescribing workforce increases, the application of study findings becomes more important in order to sustain and support the prescribers.

These five studies have been identified as relevant. They are in agreement with findings from this study, in terms of the factors that either hinder or are essential to supporting prescribing practice and the prescribers themselves. The importance of support from immediate colleagues and the wider MDT is reinforced by the findings of these studies. This is also true for the way prescriber self-confidence is upheld or undermined by multiple factors, and participants in the study by Grahame-Clarke, Rushton and Marriott (2021) cited personal confidence as an influence on prescribing practice, in agreement with this study. A new perspective raised by Grahame-Clarke, Rushton and Marriott (2022) was the difference between pharmacists and physiotherapists in incorporating prescribing into their clinical roles.

2.9   What is Known

Research from the beginning of independent prescribing to the present agrees that support (or lack of support) from colleagues and managers influences the practice of NMPs. The resistance from doctors, especially, toward NMPs (Courtenay & Carey, 2008) has decreased over time, but was still evident is some areas, in particular community nursing (Downer & Shepherd, 2010; Courtenay, Carey & Stenner, 2012) and mental health (Ross & Kettles, 2012). Support from colleagues appears to be more consistent in the advent of paramedic prescribing (Stenner, Even & Collen, 2019). Lack of support has

been linked with reluctance to prescribe and in perceived inability to progress in the role of NMP. Additionally, organisational factors have been identified as either barriers or facilitating NMP practice. For example, delay in accessing prescription pads, computer systems not supporting NMPs and Trust policies that restrict NMPs (for example, by mandating they have to prescribe as supplementary prescribers only, although they were qualified as independent prescribers). Interestingly, while the majority of literature considers influences on NMP practice in some way, there are papers that have looked at the barriers to NMP practice versus the benefits of NMP practice, rather than what facilitates NMPs (Downer & Shepherd, 2010; Scrafton, McKinnon & Kane, 2012; Dobel-Ober, Bradley & Brindlecombe, 2013; Tatterton, 2017; Stenner, van Even & Collen, 2019; Barker-Begley, 2019).

The matter of confidence of NMPs is reported to be a significant influence that affects and is affected by other factors such as colleague support, organisational expectations and, although noted in only two papers, the length of their clinical experience prior to undertaking NMP education (Courtney, Carey and Stenner, 2012; Herklots, Baileff and Latter, 2015). The NMC has reduced the length of time a nurse or midwife must be qualified before applying for an NMP course, from three years to one-year post-qualifying (NMC, 2018a). The impact of this reduction in required experience is not yet known.

None of the literature focused on why some NMPs qualify and never prescribe, although a few papers discussed it as part of their findings. Drennan, Grant and Harris, (2014), Latter, et al., (2011) and McCann et al., (2011) all reported the percentage of qualified

NMPs who were not prescribing among their participants but did not explore any reasons for this. Bowskill, Timmons and James (2012); Courtenay, Carey and Stenner (2012), Ross and Kettles (2012) reported reasons for never prescribing, including lack of support, organisational restrictions, and changing job to a non-clinical role. There is more to learn from those practitioners who qualify but do not prescribe. Shortly after qualifying could be a vulnerable time for an NMP in how their prescribing practice proceeds. Organisational delays and lack of support can diminish the confidence of the newly qualified prescriber. The fear of making mistakes is reported (Weglicki, Reynolds and Rivers et al. 2015).

2.10 Gaps in knowledge

The literature gives an overview of prescribing practice to date. Some focusses on specific professional groups, sometimes comparing one profession with another (Courtenay & Carey, 2008; Daughtry & Hayter, 2010; Downer & Shepherd, 2010; Latter et al., 2010; McCann et al, 2011; Bowskill, Timmons & James, 2012; McCann et al, 2012; Scrafton, McKinnon & Kane, 2012; Wilson et al., 2012; Drennan, Grant & Harris, 2014; Herklots, Baileff & Latter, 2015; GPhC, 2016; Maddox et al., 2016; Stenner, van Even & Collen, 2019). There have been studies that focussed on the scale of prescribing, either UK wide or in a specified geographical region (Courtenay, Carey & Burke, 2006; Courtenay, Carey & Stenner, 2012; Courtenay et al., 2017; Courtenay et al., 2018; Chater, Williams & Courtenay, 2019). Some of the studies have been conducted to look at prescribing of a particular drug group or within a specific area of clinical practice, or a specific aspect of prescribing practice (Green, et al., 2009; Gumber, Khoosal & Sajebasia,

2012; Ross & Kettles, 2012; Rowbotham et al., 2012; Dobel-Ober, Bradley & Brimblecombe, 2013; Brodie, Donaldson & Walsh, 2014; Smith, Latter & Blenkinsopp, 2014; Weglicki, Reynolds & Rivers, 2015; Nimmo, Paterson & Irvine, 2017; Tatterton, 2017; Barker-Begley, 2019; Hindi et al., 2019; Cope, Tully & Hall, 2020).

As a body of research, there is substantial knowledge about factors influencing prescribing practice, and the research agrees about what those factors are. Barriers to NMP practice are widely reported in the literature and – sometimes by default, sometimes specifically – what factors support NMPs and their practice. However, this has not been applied across the professions and varied experience between different nursing specialities indicates it cannot be assumed the experiences of different professions is homogenous.

One paper has focussed on newly qualified prescribers, and two others have mentioned or included the newly qualified experience in their findings, but the issues are not always fully explored. It is known that there is a high level of wastage – in terms of qualified practitioners not prescribing – but it is not known if or how this varies across professions.

The experience of newly qualified prescribers is under-represented in the literature. Although this was the focus of two papers and others had incidental findings around the newly qualified, there is more to learn about the transition from student to experienced prescriber. Some papers give information about the number of non-practising prescribers, and a few were able to give reasons for those who never prescribe. Competence in prescribing practice has always been underpinned by nationally set

competency frameworks in the UK. The original national framework was set by the National Prescribing Centre, and currently by the Royal Pharmaceutical Society (RPS, 2016, 2021) which applies to all professions. Prior to 2008, each regulatory body had their own standards for their prescribing registrants. The framework is written for all prescribers and intended to be used for the duration of their prescribing lifetime. None of the research has addressed use of the competency framework as a focus or theme in their research. Nimmo, Patterson and Irvine (2017) mentioned it as useful in CPD but did not explore or explain this. Finally, the majority of research to date focuses on one or two professions included in the sample. A few are open to all prescribing professions, but none have included all the professions that are able to prescribe currently. The following gaps or insufficiently answered issues have been identified:

1) There is no research into the practice of prescribing practitioners that includes all professions who currently have prescribing rights on a UK-wide scale.

2) Little focus has been given to those who are newly qualified prescribing practitioners.

3) No research regarding how the national competency framework for prescribers is being applied in the UK.

4) Little research on why qualified prescribers do not prescribe.

5) Little understanding if influences on prescribers are the same across all professions.

2.11 Question, Aim and Objectives

The literature review shows what challenges and opportunities are faced by prescribers.

It is not currently clear which of these are consistent across the experience of all

prescribing professions. The question of this research is, "What are the practices and

experiences of prescribing practitioners in the United Kingdom?" The aim of this

research is to understand the current practice and experience of prescribing

practitioners in the UK and will include those who are not actively prescribing.

To achieve this, the following objectives are:

1) To determine scale and scope of prescribing practitioners in the UK.

2) To understand how newly qualified practitioners begin their prescribing practice.

3) To understand how NMPs apply the national competency framework for prescribers.

4) To identify if reasons for not prescribing for all the prescribing professions.

5) To determine if the influences on prescribers are the same for all the prescribing professions.

The objectives are aligned with the overall aim of this study. Because Phase 2 was

developed from the outcomes of Phase 1, the specific objectives for Phase 2 were

developed at that point and are given in section 3.15, in Chapter Three.

2.12 Theoretical Framework

The purpose of a theoretical framework is to give shape and direction throughout the

research project and has been likened to an architect's blueprint (Grant & Osanloo,

2014). The research question and use of theories in previous research can pave the way for choosing an appropriate framework. In a mixed methods study, a theoretical framework assists the coherence of the research (Evans, Coon & Ume, 2011) and in any research helps to shape the study to explain the phenomenon in question (Heale & Noble, 2019). Theories underpinning this research were considered according to relevance to the research question. The research question is addressing the practice and experience of prescribing practitioners in their changing role (if new prescribers) or in their established role as experienced prescribers. For those who have never prescribed, the research question encompasses exploring reasons why they have not been able to or chosen not to fulfil this role.

Prescribing entails a professional qualification in a safety critical activity that gives new dimension to existing skills and knowledge as well as developing new skills and knowledge. A level of experience is required (defined by length of time a clinician has to be qualified in their foundation profession prior to applying to undertake the prescribing course) to be able to enmesh new skills and knowledge with the current skills and knowledge. Prescribing practice includes patient assessment and decision making, but those elements are beyond the scope of this study. It is also the level of activity and application to practice. This is also reflected in the areas of clinical practice. Non-medical prescribing was sanctioned in 1989 for health visitors and community nurses. The success of the pilot saw expansion to all nurses – but chiefly in primary care – and then pharmacists, before including the other six professions. Because the skills (developing existing and adding new ones) required in safe prescribing are multiple, a prescribing qualification has the potential to profoundly change a clinician's practice. This has not

always been met with enthusiasm by peers and senior colleagues. The qualification can contribute to expanding the scope of practice of the prescriber and change of role. In addition to adding scope to their clinical role, a prescriber will have a range of drugs they will prescribe, and this range of drugs can expand with time and experience. Practitioner experience encompasses their perspective of their own skill, their ability to use their qualification into practice, interactions with and how they are treated by peers and colleagues, and how they are situated in their own profession in terms of parameters set by their employing organisation and legal boundaries.

The use of theoretical frameworks in the literature is also considered in choosing the appropriate underpinning theory. Only one paper in the literature review stated their chosen theoretical framework; Cope, Tully and Hall (2020) used social cognitive theory in their cross-sectional survey. While none of the other papers presented specified their theoretical framework, there are frequently repeated themes that have been highlighted and discussed in the review. To attempt to identify which theoretical frameworks have been used in previous related research, an additional search was conducted. Identical databases to the ones identified for the ones used in this literature review were used, with the addition of "Open Dissertations." Similar search terms were used, with the addition of "theoretical framework OR conceptual framework OR theory" and excluding the search terms for professions. Identical Boolean operators were used. Identical limiters were used. This search produced n15 papers, none of which appear in the literature review. Of these, there was n1 paper was not accessible as full text and n6 who did not state what framework they used. Table 5 gives the details of the remaining n8 papers that specified the theoretical framework they used.

Table 5: Papers with Theoretical Frameworks

	Authors	Year	Title	Theoretical Framework
1	Borthwick et al.	2010	Non-medical prescribing in Australasia and the UK: the case of podiatry	Medical Dominance Theory
2	Ponnet et al.	2014	Determinants of physicians' prescribing behaviour of methylphenidate for cognitive enhancement	Planned Behaviour
3	McIntosh	2017	Social and Cognitive Influences on Prescribing Decisions Among Non-Medical Prescribers	Theoretical Domains Framework
4	White, Cornish & Kerr	2017	Front-line perspectives on 'joined-up' working relationships: a qualitative study of social prescribing in the west of Scotland	Social Capitol Theory
5	Husk et al.	2020	What approaches to social prescribing work, for whom, and in what circumstances? A realist review	Behaviour Change
6	Tierney et al.	2020	Supporting social prescribing in primary care by linking people to local assets: a realist review	Social Capital and Patient Activation
7	Spillane et al.	2021	Factors influencing the prescribing behaviour of independent prescribing optometrists: A qualitative study using the Theoretical Domains Framework	Theoretical Domains Framework
8	Tierney et al.	2022	Tailoring cultural offers to meet the needs of older people during uncertain times: a rapid realist review	Social Exchange Theory

The theories given in Table 5 were considered but did not provide the structure needed to fulfil the aim and objectives. Ultimately the research question and the aim were used to identify the appropriate theoretical framework used to structure this study. This ensured that the focus of the research was central in choosing the appropriate theoretical framework.

2.13 Role Theory

Role theory has been developed over decades with key researchers adding critical perspectives. Linton's functional role theory focuses on the collective level and the expected behaviours that are associated with roles within society and organisations (Biddle, 1986). He made a distinction between status and role, holding that role is the dynamic way that the rights and responsibilities that come with status are put into

action (Turner, 2001; van der Horst, 2016). This aligns with Wolf et al. (2020) who discusses role in terms of being external processes and visible behaviours that are expected or associated with the role. Biddle (1986) confirms that role theory deals with external norms and the expectations that are associated with specific roles, and deals with the position held and the expected behaviour associated with that position (Aatsen & Hansen, 2020). There are aspects of role theory that focus on the level of the individual and how they function in society or specific groups and draw meaning from interactions with others. Additionally, role theory encompasses the perspective of what it means to belong to a group and the function of the group. Role theory has been chosen for its suitability in underpinning this research to explore how individuals function as a group, groups being identified by their foundation profession, working in their immediate clinical team, working within the culture of their employing organisation and within the boundaries set by the UK laws.

2.13.1 Identity Theory

Identity is associated with personal, internal dynamics and role is associated with external influences and expectations with set positions in society, particular groups, or organisations. As such, identity theory holds that roles are held as a function of identity (Stryker & Burke, 2020). Therefore, from the perspective of the research question and design, identity theory was a relevant aspect of role theory in underpinning this study. Identity is not a singular state. Cardoso, Batista and Graça (2014) discuss professional identity and that individuals have a personal identity, which is how the individual internalises and processes experiences. They have a social identity, which is how the individual draws meaning from being in a group. Finally, the collective identity is about

shared purpose and the dynamic of how an individual is situated within a group. Hogg, Terry and White (1995) differentiate identity theory (which is used to explain the role-related behaviour of the individual) and social identity theory (which defines the nature of the self by societal standards). Professional identity is both identifying with a specific professional group and having the skills, knowledge and status in performing a professional job.

2.13.2 Social Role Theory

Social role theory is used to consider the position an individual holds and how they function within their group and interaction with the group. Here, it is the individual prescribers and how they belong to their relevant groups: their foundation profession, the clinical team with whom they work on a day-to-day basis, and the group of qualified prescribers within their employing organisation. The way the individual identifies themselves is a part of how they function and behave within the group. Social or group theory considers expected behaviour and the processes that groups uses to fulfil its purpose (Hogg, Terry & White, 1999).

2.13.3 Organisational Role Theory

Organisation theory is a branch of role theory that considers the functioning of formal organisations which hold a central purpose and are oriented around a specific function (Biddle, 1986). In this study, those organisations are healthcare systems, hospitals, pharmacies, care facilities that are service orientated. These sit within the larger organisation of the National Health Service (NHS). Some respondents work also, or exclusively, in private healthcare facilities but the principles of organisational theory still

apply. Further, professional regulatory bodies and the relevant acts of UK law are also influential in this. There are aspects of organisational role theory that deal with problem-solving. Recognition that employees have particular roles and expertise that play an important part in the service delivery, which is the function of the organisation (Cludts, 1999).

Figure 1: Theoretical Framework
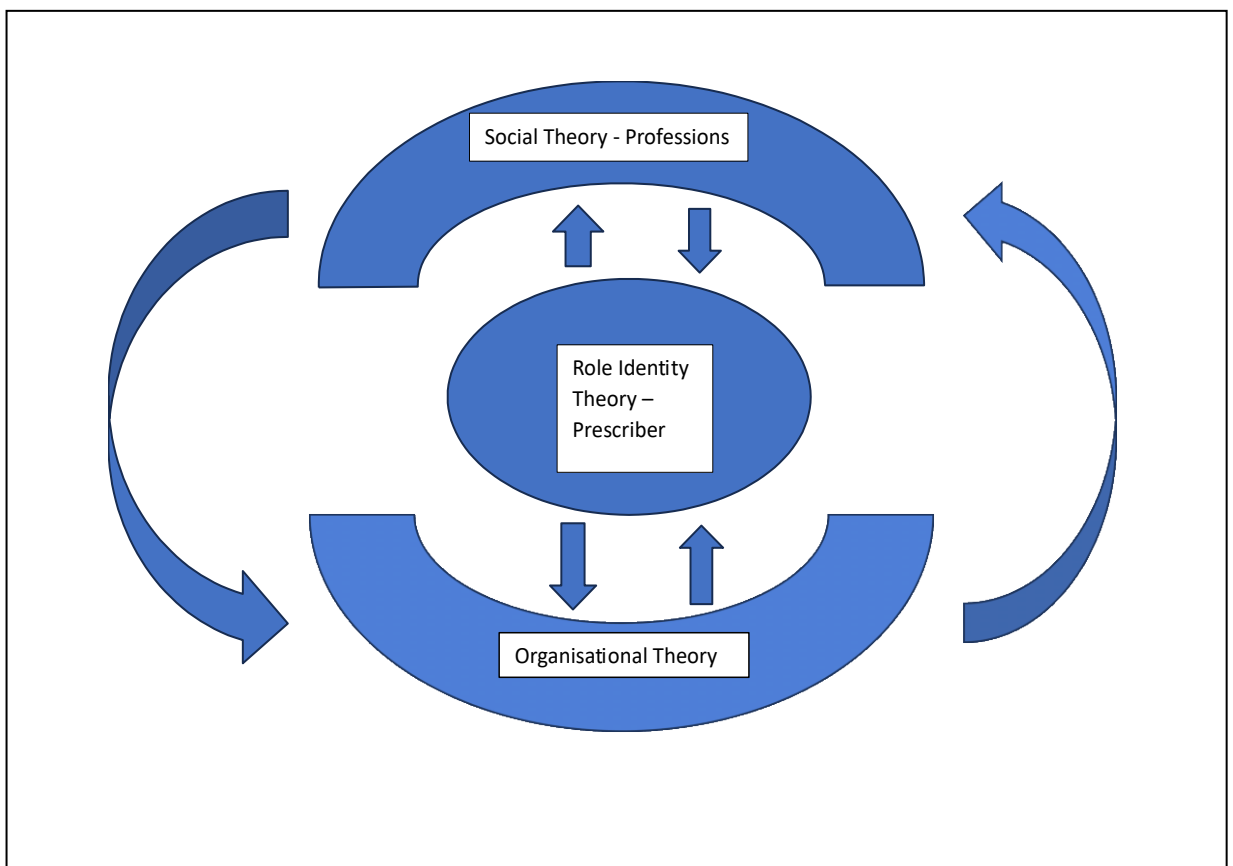
Figure 1 shows the structure of the theoretical framework and interaction of the different elements. At the centre are the individuals who occupy the role of prescriber, encompassing their sense of self-identity in that role. Underpinning that is the organisation and the theory that an organisation as an entity engages with the

environment it is in and the community it serves. It also has a relationship with those who work there, by setting boundaries, facilitating their professional roles and influencing those roles with expectations and standards. In turn, the individuals and the organisation are also influenced by professional regulatory bodies and the UK law. A prescriber's employing organisation will have policies and procedures that will either help or hinder the prescriber. The interaction with peers and senior colleagues, and the availability of systems and processes that help a prescriber to integrate theory into practice and expand their scope of practice safely are all bound up in the culture of the employing organisation.

The prescribers also belong to different professions. These are aligned with social role theory as each profession holds a group identity. This is a significant point in relation to role theory as the different professions have different limitations and within their prescribing roles. The perception of the individual prescriber, the limitations or facilitators that come with their role, and external expectations all have an influence on the person holding the role.

2.14 Summary

This chapter has presented a comprehensive critical literature review, giving an overview of the current knowledge of prescribing practice. The gaps in knowledge have been identified, leading to the objectives for this research and the unique contribution of this research offers. Role theory has been discussed as the theoretical framework used in this research, using the components of identity theory, organisational theory and social role theory.

Chapter Three

METHODOLOGY

3.1 Introduction

The previous chapter provided a comprehensive literature review and discussed what is currently known about prescribing practitioners' practice in the UK, identifying gaps in knowledge and defining the research question. This chapter gives rationale for the choice of paradigm, and discussion of the philosophical assumptions that underpin this research. The design of this mixed methods study is outlined, including a critical discussion of the merits of the chosen approaches. Ethical principles and processes are detailed. As this is a sequential study, the method for Phase 1 is discussed in detail, followed by discussion of Phase 2 methods.

3.2 Paradigms

A paradigm can be defined as a framework that gives structure to both the visible (methods) and less visible aspects of research and philosophical assumptions (ontology, epistemology and axiology) to define and shape the pathway for the study. There are alignments that feel natural and would be recognised as "normal science," but it does not mean that these alignments are rigid (James, 2015). The following definition of paradigm has been used by the researcher:

"a set of basic beliefs (or metaphysics) that deals with ultimates, or first principles. It represents a worldview that defines, for its holder, the nature of the world, the individual's place in it, and the range of possible relationships to that world and its parts," (Guba & Lincoln, 1994, p. 107).

Guba and Lincoln's (1994) definition of worldview of relationship with the inhabited world emanating from an ultimate principle also allows relationship to change while an ultimate principle is constant. The ultimate principle used by the researcher is that there are multiple levels of reality, rejecting the notion that there is a single, 'correct' reality. Guba (1990) stated his belief that a generic definition, rather than a concrete one, is more useful in terms of allowing experience to shape understanding. James (2015) concurs with this, stating that a worldview is modifiable if the standpoint changes – for example though experience, new knowledge or change in circumstance. The researcher holds that new perspective, new knowledge and experience can and does change the individual's relationship with the world they inhabit. This reflects human ability to learn and adjust opinion and perspective through new experience or being exposed to a different point of view (Kuhn, 2012). In this way, the contribution of original research adds to the depth and breadth of understanding of the given topic or phenomena. What is currently known about prescribing practice evolves with time and experience and this research demonstrates a new perspective in some known areas and presents a new focus for consideration, as defined in the stated gaps in the literature and the objectives.

Kuhn (2012) first introduced the concept of paradigms in 1962, and holds that scientific knowledge is not an incremental, linear process but, based on contributions and practice of "normal science," until issues are identified and are deemed insurmountable by the accepted means. This gives rise to new thinking and perspectives that lead to new approaches being explored and developed – sometimes called "revolutionary science". A paradigm is not just a thought process, but a general consensus on the most useful way to approach the entire process of scientific pursuit (Parahoo, 2006). Multiple

paradigms exist and no one is better or more correct than others, but fitness for purpose from beginning to end of the research process is critical in producing transparently good and useful research (Makombe, 2017). This research used mixed methods as the most appropriate in answering all aspects of the research question.

3.2.1 Pragmatism

Pragmatism has been used in this research and is a recognised and commonly used paradigm for mixed methodology in answering the research problem in its social context (Evans, Coon & Ume, 2011; Johnson & Onwuegbuzie, 2004). The paradigm wars argued about the superiority of one stance over another, and that social and experiential research was deemed by some to be inferior to physical research; however, qualitative apologists were pointing out that measuring qualitative research with quantitative quality markers was a false standard. Pragmatism holds that there is not a hierarchy in philosophical approaches (Johnson & Onwuegbuzie, 2004). Pragmatism, in rejecting absolutism (Weaver, 2018), accepts the reality of objectivity and measurability and recognises the validity of the experience of individuals and groups, and that people do interpret the world in context of their own experiences (Parvaiz, Mufti & Wahab, 2016). Johnson and Onwuegbuzie (2004) propose that pragmatism is not a perfect solution for all, and is not intended to replace purist paradigms, but in some areas of research can give added value.

Pragmatism seeks solutions rather than being fixed within a specific ontological or epistemological position (Feilzer, 2009; Morgan 2007) embracing what works, accepting that diverse approaches may be needed to fully answer a question (Creswell et al., 2013;

Elder-Vass, 2022; Mackenzie & Knipe, 2006). Because pragmatism is not bound to a single philosophical stance it holds the research question centrally and employs the most appropriate framework and methodology to answer the question robustly and as completely as possible (Morgan, 2014; Creswell & Plano Clark, 2018). Pragmatism was chosen in this research because an approach that included multiple perspective was required to fully meet the objectives and answer the question.

3.3 Philosophical Assumptions

Although pragmatism is focused on the research question and solving the problem (Creswell & Plano Clark, 2018) the lack of a single philosophical position does not mean it is devoid of philosophical value. It is an acceptance that the nature of reality cannot be definitively defined (Shannon-Baker, 2016). Whether ontology and epistemology are acknowledged or not, they underlie choices and actions whether the researcher is conscious of that or not (James, 2015; Marsh & Furlong, 2017; Creswell & Plano Clark 2018). This permits the researcher's view that there are multiple points of reality and embraces the validity and value brought by quantitative and qualitative approaches. The application of pragmatism in this study comprises quantitative methods in Phase 1 and qualitative methods in Phase 2. The underpinning principles of each approach are honoured in the two phases and the points of integration – discussed in section 3.6.4 – provide the connection between the two phases. Chapter 5 brings together the quantitative and qualitative results and discusses the significance of both.

3.3.1 Ontology

The philosophy of existence and the nature of reality underlies perspective, values and understanding of the world and how it functions, and how people function within it. Ontology sets out the philosophical assumptions of what reality is and what may be known. Looking to the key founding philosophers, it is possible to detect their ontological assumptions which informed how they defined the meaning of existence (Conee & Sider, 2015). From the fathers of philosophy, Aristotle held that reality was within the substantial world (Vezina, 2007) and from this perspective he developed the *Scala Naturae*, a scale of perfection, from minerals at the bottom and humans at the top, classified according to the ability to grow, reproduce, move and think rationally (Hodos, 200). Plato, on the other hand, worked from an ontological stance of dualism – the sensible and insensible worlds; that is, the material and ideas (Sayer, 2005; Bagher Gomi, 2015). He maintained that the world of forms, or ideas, was as real and important as tangible matter. Debates about the nature of reality have ensued ever since, which have added to variations within each discipline.

The researcher's own perspective is that there are multiple points of reality in that the entirety of the world's phenomena cannot be explained by a single perspective. Arguably, one state of reality – for example, the objective, measurable and observable nature of physical objects and their characteristics according to the laws of biology, chemistry and/or physics – is not more real than the lived experience, perception and ideas of the people who inhabit and interact with the physical world (Russell, 2013). This perspective, of multiple points of reality, makes the use of mixed methods and pragmatism suitable in addressing the research question. While an ontological position

sets the stance of the individual researcher, it influences but does not rigidly dictate the method or research tools used (Boonstra and Rauwes, 2021).

3.3.2 Epistemology

Epistemology is the relationship between the researcher and the research. This can sometimes be difficult to separate from ontology. The key distinguishing question is, does this position comment on what reality is (ontology), or does it focus on *how* to access knowledge of reality (epistemology)? Epistemology is different from the methods, which are the visible part of the research process (James, 2015).

Epistemology refers to the nature of the relationship between the knower and what can be known, for example, Guba and Lincoln (1994 p.108) claim that orthodox science, because of its belief in a "real" world that can be known, requires the knower to adopt a posture of objective detachment in order "to discover how things really are." This approach begins to show how the research question might be answered and lead to which methods/research tools will achieve that. The epistemological approach taken in research must align with the ontological perspective. In this mixed methods study, the underlying philosophical assumption is that there are multiple aspects of reality and therefore can be accessed in more than a single way. The research question defines the knowledge that is sought.

A positivist approach is rational and quantifiable, the central concept is that reality exists independently of human perception and experience (Darlaston-Jones, 2007; Cowan,

2009; Ritchie, et al., 2014). It purports a singular reality that can be discovered, is value-free and separate from human experience (Bergman, 2008; Feilzer, 2009). Researcher detachment, objectivity and measurability of the data are markers of good quantitative research (Shannon-Baker, 2016). These principles were used to underpin the approach to Phase 1 in the development of a quantitative questionnaire as a research tool, and the data collection and analysis.

Interpretivism holds that reality is a construct of human experience, it does not hold independent existence. These experiences, opinions and behaviours are a result of, or influences on, the investigated phenomenon and explores the relationship between people and the situations they encounter. Subjective experiences, such as culture, society and upbringing are a few factors that that can affect an individual and their perspective, choices and behaviour (Amineh & Asl, 2015). Previous experience can affect current experience, so that two people who are part of the same phenomena may have very different perspectives depending on their backgrounds, social conditioning, and expectations (Ritchie, et al., 2014). The premise is to explore the perceptions that surround the phenomenon – in this study, the experience of being a prescriber – in order to gain depth of understanding. These principles were applicable to the development of the interview protocol and guide used in the Phase 2 semi-structured interviews, and in the interpretation of the resulting qualitative data. There is acknowledgement that there are multiple possible interpretations of the phenomenon in question. The natural alignment is with qualitative methodology and as such it is recognised that there is a valid relationship between the researcher and the research. The use of both quantitative and qualitative methods in this study is valid, but the differences between them are

acknowledged. As noted by Bahari (2009) they have different ontological and epistemological orientations, but these are acknowledged and reconciled by the use of pragmatism. It is important to note that the quantitative Phase 1 and qualitative Phase 2 of this sequential study are not separate studies, they are significantly related to each other. This is explained in section 3.6.4.

3.3.3 Axiology

Axiology is the theory of value. The researcher makes the choice about what is an important research question, and is influenced by their socio-political position, personal experience and beliefs (Morgan 2007; Kaushik & Walsh, 2019). Biddle and Schafft (2015) assert that pragmatists can sometimes underestimate the importance of axiology. In this research the values are highlighted in how the researcher is situated in the research, the ethical processes and rationale for choices made. The overall rationale and personal and social position for asking this research question has been outlined in section 1.3. The influence of the personal position of the researcher, situated in the phenomenon being investigated, is acknowledged. Axiology runs through the research process, including the questions asked in both questionnaire and semi-structured interviews as a result of what is valued in this area of research; data collection and analysis conducted correctly and transparently continue the ethical process (Hesse-Biber, 2012). Axiology will always be present, what may vary is how explicit the researcher is throughout the process (Brown & Dueñas, 2020). The explicit and institutional ethical procedures will be discussed later in section 3.8.

3.4 Mixed Methods

It is important to be clear about the difference between methodology and method as these are not interchangeable terms. Methodology is the *rationale* for the chosen research approach (Brookshire, 2018) based on the study and debate about the principles of research and approaches (James, 2015). The analysis of available procedures provides the rationale for the chosen approach. The method is the selected approach to the research (Brookshier, 2018) and the choice of analytical tool or tools and processes chosen to answer the research question. Shorten and Smith (2017) note the use of mixed methods research in nursing and healthcare research.

Mixed methods can be traced back to the 1920s (De Lisle, 2011). It gained momentum and application from the late 1980s, and increasingly used in the last 30 years (Leech & Onwuegbuzie, 2009; De Lisle, 2011; Biddle & Schafft, 2015). One of the characteristics is that mixed methods research uses the strengths of different methodologies to answer a research question that could not be answered with the use of a single approach (Yauch & Steudel, 2003; Johnson & Onwuegbuzie, 2007; Teddlie & Tashakori, 2012). It is not an adulteration of two methodologies, but a third way in its own right (Creswell, Fetters, & Ivankova, 2004; Driscoll et al., 2007; Evans Coone & Ume, 2011; Johnson & Onwuegbuzie, 2004) encompassing philosophical assumptions that have an effect throughout the research process (Evans, Coone & Ume, 2011). This awareness stops mixed methods being an unstructured "pic-and-mix" of convenience (Morgan, 2014). Johnson (2008) affirms that using mixed methods holds the research question at its centre and runs throughout the process. The intent is to reconcile and address aspects of research that may otherwise have been problematic (Driscoll et al., 2007; Teddlie,

Tashakouri & Johnson, 2008). Key characteristics of mixed methods research is clarity of how the different methods are mixed and that quantitative and qualitative are usually both used (Johnson, Onwuegbuzie & Turner, 2007) although that is distinct from multi-methods (see section 3.6.2).

When identifying mixed methods as appropriate for a particular research study, the rationale for this must be clear (Creswell 2013). The relationship between the datasets of Phase 1 and Phase 2 is a critical function of and reason for choosing mixed methods. This relationship is the area of mixed methods that delivers a dimension and understanding that two concurrent studies would miss in this research. This clarity opens new ways of thinking and exploration. Kushner (2002) concurs that methodologically, the rationale, not the technical process, is under scrutiny as a matter of fitness for purpose. Mixed methods are appropriate in this research as it allows choice of design and analytical tools that will best answer the research question because it explicitly embraces paradigm pluralism (Teddlie & Tashakkori, 2012. Investigating the practice and experience of prescribing clinicians in the UK demands a quantitative approach to reach across the UK in understanding elements of prescribing practice, and a qualitative approach to delve into the lived experience of prescribers. However, two individual studies would fall short, even if concurrent, potentially leaving unaddressed aspects. Therefore, mixed methods with defined points of integration creates relationship between phases of the study, minimising potential gaps and unanswered questions. Each phase of the study was designed with the other phase in mind, so they have co-influenced each other.

3.5 Research Design

3.5.1 Sequential Explanatory

A sequential design has been used for this mixed methods research, which explicitly recognises the relationship between the two phases of this study (Plano Clark, 2011; Fetters & Molina-Azorin, 2017; Creswell and Plano Clark, 2018). In Phase 1, this research sought to identify the number of prescribing practitioners, patterns in their prescribing and influences on their practice. Phase 2 of this research aimed to understand and explore the experience of the prescribing practitioners and their perspective of the factors that influence their practice. This has the purpose of explaining the quantitative data.

Having considered the options with mixed methods research, the chosen design of this research is sequential explanatory. This design is characterised by the collection and analysis of quantitative data, followed by a collection and analysis of qualitative data and, critically, there is a strong and defined link between the two phases of the research (Creswell & Plano Clark, 2018). This provides the opportunity to explain significant and non-significant data and add depth and richness that the quantitative data alone would not provide (Ivankova, Creswell & Stick, 2006). The fact that this begins with the quantitative data collection phase does not mean that it has greater importance, but it is the initial driver in this design. The appropriateness of this design for this research lies in the fact that this is a UK-wide study, so using the quantitative large-scale data collection first was designed to collect data from all prescribing professions and to have as wide a reach as possible across the UK to fulfil objectives 1-4, and from there explore

the data in depth which will develop and give added dimension to objectives 1-4 and fulfil objective 5.

3.5.2 Alternative Methods

A sequential exploratory design is characterised by an initial phase of qualitative data collection and analysis followed by a phase of quantitative data collection and analysis. This strategy is useful when developing and testing a new instrument. The quantitative data is used to assess constructs identified by the qualitative data allowing the researchers to develop an instrument and is a means to make the initial qualitative data generalisable (Creswell & Plano Clark, 2018). This was rejected as a design for this research as it does not fully align with the objectives. This is because leading with the qualitative phase would still give richness and depth and the resulting data set would then be used to design the questionnaire for the next phase in order to explore, in a larger group, the quantitative data, but creating a new instrument is not an aim or objective of this study.

Multi-methods research is different from mixed methods (Creswell, 2013). A single paradigm and methodology is used but multiple quantitative, or multiple qualitative, methods are employed to answer the research question (Shorten and Smith, 2017). Multi-method was not considered suitable as this research will be better served by the employment of both quantitative and qualitative methods to meet the objectives.

A concurrent design is characterised by two or more methods used to confirm, cross-validate, or corroborate findings within a study. The purpose is to overcome a weakness

in using one method with the strengths of another (Almeida, 2018). It is an equal status method that integrates the process of data collection and analysis (Wisdom & Creswell, 2013). However, this runs the risk that anomalies in data will occur that cannot then be explored or explained fully as there is a single phase of data collection. In a concurrent Transformative design, integration is done at the point of data analysis. Transformation of data takes place by "quantitising" qualitative data and "qualitising" quantitative data to evaluate a theoretical perspective at different levels of analysis (Kroll & Neri, 2009). This does have limitations and can be seen to muffle the richness and depth of qualitative data (Sale, Lohfield & Brazil, 2002; Driscoll et al., 2007).

3.6   Points of Integration

A principal characteristic of mixed methods is the fact that there are points of integration or connection. This can happen at a singular or multiple points. As such, it is critical that the points of integration are clearly identified as this integration enables a single coherent study with clearly defined stages, as opposed to discrete, self-contained studies (Creswell, 2013; Fetters and Molina-Azorin, 2017).

The points of integration of this study are described in Figure 2. These points occur sequentially. First, the paradigm of pragmatism was used to support the integration of the phases of this study as it provides philosophical acceptance of apparently opposing quantitative and qualitative assumptions to create a unified study. Second, the next point of integration is connection through the sampling strategy and use of a nested design (Fetters, Curry & Creswell, 2013) where the participants in Phase 2 had all been

respondents to the questionnaire used in Phase 1. This was important as a function of Phase 2 results is to explain the results of Phase 1. Using an entirely different sample could have weakened the connection and introduced the possibility that a different sample would have produced different data – valid data, but it would be difficult to justify explaining Phase 1 results with results from an unrelated sample. Third, the next point of integration is 'building,' where the quantitative results directly informed the development and content of the research tool used in Phase 2, the protocol and the semi-structured interview guide. The protocol sets out key findings from Phase 1 and how they align with the objectives, and from there inform the areas to be developed in the Phase 2 semi-structured interviews. The quantitative and qualitative data sets were analysed separately using the appropriate methods and the required quality markers. Fourth, the final point of integration is in the discussion chapter, where the key findings from both data sets are confirmed and then how they jointly inform the final key findings which are discussed, and recommendations based on their significance.

Figure 2: Points of Integration
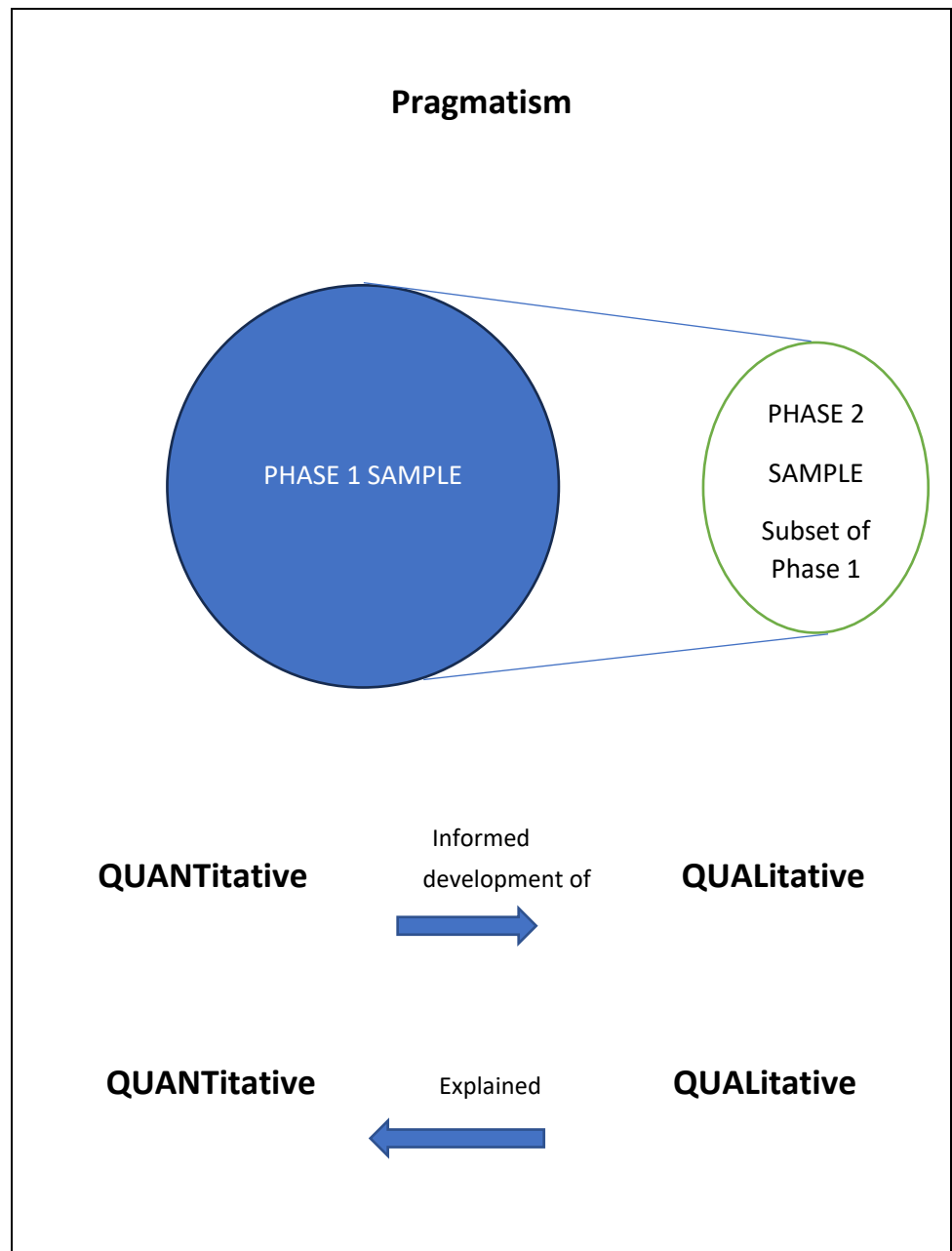
3.7 Timeline

As a necessary exercise in determining the size of the population, which was needed to calculate the optimal sample size, the researcher made Freedom of Information requests (Appendix 4) to each of the regulatory bodies – NMC, GPhC and HCPC –

regarding the number of qualified prescribers for the specified professions. The requests were sent on 10th March 2021 and all replies with full information were received by 7th April 2021.

Submission to ethics committee for Phase 1 was made and approval — following the fulfilment of conditions and recommendations — was given on 5th July 2021. The questionnaire pilot was open from 13th July until 1st August 2021. The final survey was open from 5th September until 18th November 2021 inclusive. Following analysis of the Phase 1 results, a modified submission was made to the LSBU ethics committee and approval given to proceed on 13th June 2022. The pilot interviews took place on 26th May and 2nd June 2022. The one-to-one semi-structured interviews took place between 4th July and 31st August 2022.

3.8   Ethics

The researcher's conduct is governed by London South Bank University (LSBU, 2016) and, because the researcher is a nurse, is also governed by the regulatory and professional bodies she belongs to (RCN 2009; NMC, 2018b). Ethical practice includes eliminating bias as far as possible, ensuring confidentiality for all participants, transparency, and demonstrably rigorous practice.

For Phase 1, the the questionnaire respondent information sheet (Appendix 5) and consent form (Appendix 6) were embedded at the beginning of the electronic questionnaire (Appendix 7). The researcher emailed the relevant people at each of the

professional colleges outlining the research, including a copy of the questionnaire - advising that it would be subject to change by ethics committee – and requested agreement in principle for them to distribute the link to the electronic survey once approval was granted by the ethics committee. The agreements in principle can be found in Appendix 8. Ethical approval for Phase 1 was granted on 5th July 2021 after fulfilling the conditions given by ethics committee (Appendix 9).

The researcher was fully compliant with the Data Protection Act (2018) with regards to participants personal information and safe storage of data. Electronic data was required and, in compliance with the LSBU data protection policy (LSBU, 2015) and the Data Protection Act (2018), all data were stored securely and will be held for five years after the research has been completed. Data is stored in the university secure cloud server. Identifiable data was removed from the data set prior to analysis. The identifiable data from the questionnaires were downloaded separately, removing the possibility of identifying the individual's answers in the survey. Only the researcher had access to the electronic data. The code book for Phase 1 data (Appendix 10) was stored securely and accessible only to the researcher. For the purposes of analysis and publication, pseudonyms and codes were used. While areas of clinical practice or clinical specialties were used, no individual place of employment, specific geographical area, Trust or employing organisation has been identified or named.

On the completion of Phase 1 data collection and analysis, a modified application was made to ethics committee to proceed with Phase 2. The results of Phase 1 informed the development of the semi-structured interview protocol (Appendix 11) and in turn, this

was used to write the semi-structured interview guide (Appendix 12). The interview guide, participant information sheet (Appendix 13) and participant consent form (Appendix 14) were the three documents submitted to ethics committee and ethical approval (Appendix 15) was granted on 13th June 2022 so that Phase 2 could proceed.

Identified risks were the contravention of legislation on human rights; to mitigate the specific risk posed by this study the respondents were asked to provide identifiable data (name and preferred contact) if they were willing to be interviewed in Phase 2. The secure storage of data was explained. Secondly, potential psychological intrusion resulting in distress; respondents to the questionnaire, and participants in the interviews, were advised their involvement was completely voluntary and there was the option to skip questions. With regard to the semi-structured interviews, the participants retained the right to withdraw their consent to participate up to the point that data analysis commenced. NHS or local counselling or professional support would have been signposted had anyone been distressed. Further, contact details were given on the information sheets (Appendices 5 and 13) for the primary supervisor and Chair of the ethics committee if questionnaire respondents or interview participants wanted to raise concerns. The final risk identified was the potential of compromising professional boundaries. Anyone known to the researcher was not eligible for inclusion in Phase 2. Attention was given to interviewing skills to avoid leading questions, unclear or multiple questions at once or the researcher giving opinions or value judgments. The mitigation measures were accepted by the ethics committee. No patients were involved, and no physical examinations or investigations were conducted so university ethical approval was required, but NHS ethical approval was not needed. This was confirmed by use of

the NHS Research Ethics Committee tool to determine if NHS ethical approval was needed in addition to university ethical approval. The result was "no" for England, Northern Ireland, Scotland and Wales. Recruitment was not done through the NHS, therefore Health Protection Agency ethics approval was not required.

3.9 Phase 1

The objectives covering Phase 1 are included in the overall objectives for this study. Objectives 1 to 4 in particular apply to phase 1, while objective 5 pertains more to Phase 2 and, after Phase 1 data analysis, objectives specifically for Phase 2 (see section 3.15).

Phase One:

1) To determine scale and scope of prescribing practitioners in the UK.

2) To understand how newly qualified practitioners begin their prescribing practice.

3) To understand how NMPs apply the national competency framework for prescribers.

4) To identify reasons for not prescribing for all the prescribing professions.

5) To determine the influences on prescribers for all the prescribing professions.

3.9.1 Survey

Phase One of the research is a survey, using a quantitative questionnaire sent to practitioners across the UK from all professions who have qualified as prescribers. The survey phase was designed to produce descriptive quantitative data to give specific information about prescribing behaviour and influences. The choice of questionnaire

design and construction must be appropriate and sound, or there is a risk of unreliable or inaccurate data (Gillham, 2007).

Advantages of a questionnaire is that it can collect large scale data at low cost, especially since the advent of electronic tools has cancelled the need for large quantities of paper and postage. The disadvantage is the inability to gather the perceptions of respondents in the depth that is needed to meaningful understanding (Calnan, 2019) therefore that is addressed in the qualitative Phase 2 of this study. The purpose of the questionnaire was to collect a large amount of descriptive quantitative data to meet an acceptable confidence level in order to be generalisable.

3.9.2 Questionnaire Development

A questionnaire was developed as the research tool in the survey process. Initially, general areas of inquiry were developed around the themes and gaps in knowledge identified in the literature review. This information directly informed the objectives for the research. Authors of quantitative research used in the literature review were approached with a request to view their questionnaires. All those who responded generously shared their complete questionnaire (Courtenay and Carey, 2008; Courtenay, Carey & Stenner 2012; Green et al., 2008; Hindi et al., 2019; Tatterton, 2017; Cope et al., 2019). Ross & Kettles (2012) had included their full questionnaire in their published work. Scrutiny showed that there were some similar areas. While no question was reproduced with exact wording, there are similarities in the subject area of some questions. Appendix 16 shows which questionnaires had questions related to the topics covered in the questionnaire used in this study. No one questionnaire was appropriate

in its entirety for this research, due to a different or narrower focus of investigation in the previous research, and the points of originality covered in this research.

The questionnaire for this study includes questions on demographic factors, including clinical role, area of clinical practice and length of prescribing experience. There are questions about institutional support/constraints to prescribing practice, experiences of prescribing, volume of prescribing and common prescribing behaviour, and attitudes to prescribing practitioners. The online platform, Joint Information Systems Committee (JISC) was used.

3.9.3 Questionnaire design

The questionnaire opens with participant information (Appendix 5), followed by participant information consent questions (Appendix 6). Oppenheim (1992) advises starting with open, general questions first and then moving into more structured questions later. At the same time, he acknowledges that question order may be dictated by the questionnaire itself, its subject and length. The beginning of the questionnaire opened with general questions about qualifications held, date obtained, area of clinical practice – professional demographic details that served to engage the participant personally (Oppenheim, 1992; Shaughnessy, Zechmeister, & Jeanne, 2011; de Vaus, 2014; Dillman, Smyth & Christian, 2014). Questions then funnelled to specific aspects of prescribing practice. Some of the questions made use of Likert scale structure. All questions had an option "prefer not to say" or "N/A" (depending on the content of the question). This gave the respondent a choice and avoided forcing an opinion that did not fit the actual view held, or complete non-response/question avoidance (de Vaus,

2006). Having these options increased accuracy of answers, making the data more reliable the data and meeting the set objectives (Buckingham & Saunders, 2004). More specific areas of questioning followed, with sensitive questions signposted. A funnel approach starts with the broad questions and continues to questions which have a narrower focus. The questionnaire used in this research followed this funnel approach and ended with broad demographic information – such as age range, sex, geographical area – as this is quick to answer and signals the end of the survey and its subject matter (Gillham, 2007; de Vaus, 2014).

Balance had to be found between the depth and variety of questions, and the complexity and length of the survey, to gather relevant data but avoid losing the interest of the participants and therefore their willingness to complete the survey (Gillham, 2007). This was achieved in defining a boundary for what could be included in prescribing practice (see section 2.2) for the scope of this study. Rather than use a mixed-method survey within Phase 1, the questions focussed on quantitative descriptive data that will inform the development of Phase 2 where qualitative methods will be used to explore further and in depth.

3.10 Validity and Reliability

3.10.1 Validity

Validity is the degree to which the data covers the area of investigation (Taherdoost, 2019) and measures what it is supposed to measure. Content validity is strong when the questions address all the content that is to be measured (Heale & Twycross, 2015). This

principle links to the point made by Creswell (2015) that consideration should be given to which quantitative data needs be explained by the qualitative data in a sequential explanatory design. The interview protocol in Appendix 11 demonstrates how the quantitative data informed the development of Phase 2 in alignment with the research objectives; this is discussed in detail in Chapter 6. Face validity, that is, the consideration given to whether the instrument – the questionnaire – measures the concept it is designed to measure was addressed by using an expert panel (discussed further in section 3.10.2). Their opinions were sought on the balance of questions set in the given area of enquiry (Heale & Twycross, 2015). While face validity is a subjective measure, expert opinion on how relevant and thorough the survey is to the area of investigation is useful, alongside other aspects of validity.

This study lacks predictive value, or external validity, due to the below optimum response rate, meaning that the results are not generalisable to the given population. However, this does not mean the questionnaire is an invalid tool. Threats to validity in an explanatory sequential design include poor sampling strategy for Phase 2, unclear development of the interview guide and lack of clarity around how the qualitative data explains the quantitative data (Creswell, 2015). These threats were considered and mitigated by use of an expert panel and by piloting the questionnaire.

3.10.2 Expert Panel

Once the questionnaire was written, opinion was sought from an expert panel. A copy of the questionnaire was issued to a team of eight qualified prescribers. Each member had a minimum of 10 years' prescribing experience, up to 17 years' experience. All were

practising clinicians and teaching prescribing in Higher Education Institutions. They were asked to specifically comment on the time it took to complete, clarity of the questions, if the answer options made sense in relation to the question and any other comments/opinions they wanted to make. Clarity of the questions is extremely important, to reduce as much as possible the margin for interpretation of what the question might mean (Foddy, 1993). Two small adjustments were made as a result. Question 27 (asking if any prescribing errors were ever made) had the option to proceed to the next question if the answer was "none" thus avoiding questions about how the post-error experience affected them. An extra answer option was added to Question 34, which asked if the participant had ever been asked to mentor a prescribing student. The option 'Yes, but it is not practical for me to do so,' was added (Appendix 7). These adjustments were in place prior to submitting to ethics committee.

3.10.3 Reliability

Reliability speaks of the research instrument rather than the data. The principle of reliability is consistency (Oppenheim, 1992; Calnan, 2019) and is needed to uphold validity. In other words, the validity of the data will be in question if the research tool is not accurate (Heale & Twycross, 2015). To achieve this, the research tool – the questionnaire – must be clear and well written. Threats to reliability would be questions that are ambiguous and therefore liable to be interpreted differently by respondents, or leading questions that coerce respondents in a particular direction (Allsop, 2019). Due to the unequal numbers of prescribers in the different professions, it was clear that Phase 1 would be producing descriptive statistics, and this would have been the case even if the sample size had been large enough to have construct validity. Direct

comparison between professions would be of interest, but comparative or predictive statistics would not be reliable between such extremely unequal groups. The objectives and design of the study meant that the questionnaire would be used once and not repeated at a later date as there was no intervention in this research, so test-retest was not a possible strategy to test reliability (Gerrish & Lathlean, 2015).

3.10.4 Phase 1 Pilot

Post ethical approval, the pilot study has the function of testing the questionnaire and analysing if the resulting data are valid (Knapp, 1998; Neuman, 2014). This helped identify if time taken to complete, question clarity and overall sense were consistent or if there were any further anomalies. Any gaps in data or weaknesses in the questions would be identified and addressed before rolling out the survey to a larger cohort. A cohort of 28 prescribers were invited to participate and 12 responded and completed the survey. This was a function in establishing reliability – that questions are clear, understandable and neutral in tone (Fink, 2009). Data that suggests questions have been answered from different perspectives can indicate unclear or poor wording in questions, leaving them open to varied interpretation (de Vaus, 2014). The pilot showed no anomalies. Respondents both in the expert panel and the pilot group had been invited to comment directly on the clarity of questions, answer choices and length of time taken to answer the questionnaire. Both groups fed back that questions were unambiguous and were not leading. The questionnaire has, within some questions, an option to select "other" where the answer choices supplied may not reflect the participant's own status so they could free text short answers. This questionnaire consists of closed questions. Well-constructed closed questions increase reliability because they remove the risk of

bias, misinterpretation and (Buckingham & Saunders, 2004) and will produce quantitative data (Zohrabi, 2006).

A questionnaire – unless long and intricate, which can itself lead to problems of discouraging completion and potential confusion – inherently lacks depth, coupled with a lack of capacity to explore given answers once the survey is complete. Therefore, clarity on which questions needed to be asked was imperative. This was underlined by defining, in section 2.2, what is encompassed in prescribers' practice for the purposes of this study.

3.11 Phase 1 Sample

The Phase 1 sample was drawn from a population of prescribing practitioners across the UK from all professions. The population was the entirety of all the people who would be eligible to participate in the study and to whom the results are relevant (Gillham, 2007). In this study, the population consists of all qualified prescribers in the UK. The sample frame is the group of individuals out of the population who can be selected to participate in the study. The sample frame might be the whole population, but more usually a section or sections that represent the population (de Vaus, 2014; Gerrish & Lathlean, 2015). The sample are the individuals who chose to respond to the survey (Martínez-Mesa, et al., 2016).

Due to the widely varied number of prescribing practitioners in each profession, a disproportionate stratified sampling strategy has been adopted. Proportionate representation would result in a huge number of nurse respondents and too few allied

health professionals which would undermine the aim and purpose of the research. Disproportionate stratification was chosen to capture the critical input of the smaller populations of the Allied Health Practitioner prescribers. The unequal size of the prescribing professions also means that meaningful comparisons could not be made between different strata (the professions) therefore descriptive statistical data from Phase 1 are presented in Chapter 4.

A cross-sectional design was chosen, using a sample drawn from the defined population of prescribing practitioners at a specific point in time. Its function as a descriptive survey is concerned with the characteristics of the individuals in the sample (Oppenheim, 1992; Salaria, 2012). A factoral survey design is useful for answering questions concerned with judgment and decision-making (Ludwick et al., 2004) but not useful for the purpose of this questionnaire.

Simple numbers of qualified prescribing practitioners are available through regulatory bodies; however, they update the public information at different times. Freedom of Information (FOI) requests were submitted to the Nursing and Midwifery Council (NMC), Health Care Professions Council (HCPC) and General Pharmaceutical Council (GPhC) (Appendix 4). HCPC and GPhC gave numbers of registered independent and supplementary accurate to end of March 2021. NMC gave numbers of registered independent, supplementary and community prescribers accurate to end of September 2021 (see Table 5).

Table 6: Inclusion and exclusion criteria for questionnaire

Inclusion Criteria (Survey)	Exclusion Criteria (Survey)
• Dietitians, midwives, nurses, paramedics, pharmacists, podiatrists, physiotherapists and radiographers (diagnostic and therapeutic) who hold one or more of the following prescribing qualifications: V300, V150 or V100	• Professions not eligible to undertake the prescribing qualifications V300, V150 or V100, including optometrists.
• Qualified prescribers: those who have received their results from their V300, V150 or V100 course.	• Student prescribers (not yet received their results from their V300, V150 or V100 course).
• Working in the UK	• Working outside the UK

3.11.1 Phase 1 Sampling Strategy

The population of prescribers work in the community, primary care and hospitals. Probability sampling was used for the survey as it was an objective to give an overview of the practice of prescribing practitioners in the UK. The aim was to recruit a large sample that includes all eligible professions. The overall targeted population was prescribing practitioners but within that, all the eligible professions needed to be represented so everyone within the sample frame has a chance of participating (Cowan, 2009; Fink, 2009; Fink 2010).

Whole population recruitment was both unlikely and undesirable, with >108 thousand independent, supplementary and community prescribers in the UK by 2021.

Proportionate representation would have very small numbers for allied health professionals. Nurses (including community nurses) and midwives account for 88.75% of the overall prescribing population. Pharmacists are 8.27% of that population. The percentages decrease through the individual allied health professions. To stay proportionate, 88.75% of the nursing/midwifery prescribers would have been included, along with 8.27% of the pharmacist prescribers. This would give 79,875 nurses and midwives and 694 pharmacists in the survey. Accordingly, there would have been 36 physiotherapists, 3 podiatrists, and less than whole numbers for radiographers, dietitians, and paramedics (see Table 7 for details of these numbers). This is before considering response rate. Evidently, proportionate representation would result in too few allied health professionals, undermining the aim of this research. Disproportionate stratified sampling will capture the critical input of the professions with small numbers of prescribers. A stratified sample will keep the different professions in prescribing distinct, and although relationships and comparisons will not be possible, the stratification is justified as this keeps the opportunity for exploration of Phase 1 results in Phase 2 of the study (Fink, 2009).

3.11.2 Phase 1 Recruitment Procedures

The institutions that have access to the whole population of prescribing clinicians are the regulatory bodies, Nursing and Midwifery Council (NMC), Health and Care Professions Council (HCPC) and General Pharmaceutical Council (GPhC). All three were approached with a view to gaining agreement in principle to advertise the electronic survey to their members after ethical approval has been granted. However, due to the

volume of similar requests that all three institutions receive, they each have blanket policies stating they will not distribute surveys or research information.

The next strategy was to approach each of the professional colleges with the same request. General Data Protection Regulations (GDPR) law (Data Protection 2018) and ethical practice forbade the researcher having access to members' email addresses. The following professional colleges agreed and distributed the survey to their members:

College of Paramedics

British Dietetic Association

Royal Society of Radiographers

Royal College of Midwives

Royal College of Nursing

Queen's Nursing Institute

Royal College of Podiatrists

The GPhC and Chartered Society of Physiotherapists were also approached but were unresponsive. The professional colleges advertised the questionnaire to all their members with the explanatory statement by email, professional newsletter, and closed professional websites that were inaccessible to the public. A request was made to send reminders midway through the time the survey was open as this can improve the response rate (McPeake, Bateson & O'Neil, 2014). A short explanation to participants was sent with the link to the questionnaire and this included a statement that the link could be shared with colleagues but there was a clear directive that the questionnaire link would not and should not be posted on public social media where access to the questionnaire would have no gatekeeper and would therefore be accessible to

individuals who do not meet the eligibility criteria. Some data might appear congruent from ineligible individuals and some anomalies may be from genuine respondents. While this is a risk with all questionnaires, the risk is minimised by sending it to the targeted population and using closed electronic access, avoiding open social media.

3.11.3 Phase 1 Sample Size

To determine an appropriate sample size, the population size was described first; that is, the number of qualified prescribers in each profession. This was achieved through the responses to freedom of information requests made to the regulatory bodies. The sample size calculation was carried out using Raosoft (2004) sample size calculator, with a p-value set at 0.05 as an acceptable confidence level. A large enough sample will produce data that are generalisable; oversampling will not improve the quality or generalisability so would be considered unethical in terms of unnecessary recruitment and data collection (Malone, Nicholl & Coyne, 2016). Table 7 gives number of qualified prescribers as of March 2021, and the calculated sample size.

Table 7: Raosoft calculated sample size

Profession	No. Prescribers March 2021	Calculated Sample size
Dietitians	142	104
Nurses	91,721	383
Midwives	2335	330
Paramedics	809	261
Pharmacists	11,138	372
Physiotherapists	1506	307
Podiatrists	551	227
Radiographers	305	171
Total population	**108, 507**	
Total sample size		**2155**

If a sample is too small, it is not possible to extrapolate the statistical data to the population (Faber and Fonseca, 2014). Telephone or postal surveys have been noted to have higher response rates than emailed or internet surveys (Sinclair, et al., 2012), but these are more costly in time and financially. The Raosoft calculator (2004) recommends sample size based on required confidence level, acceptable margin of error, response distribution and population size. It will be noted that the resulting preferred sample sizes for each profession therefore vary hugely in terms of proportion to the population. So, if the recommended sample sizes are reached, the response rate will range from 0.4% to 73% where the smaller the population (the number of prescribers in each profession) the higher the proportion of responses needed to deliver reliable data.

3.11.4 Response Rate

In terms of a respondent engaging with a survey at all, sampling strategy is important in reaching the sample frame for whom the subject is relevant (Fan and Yan, 2010). In terms of keeping a respondent engaged with a survey so they complete it, the length of the survey can affect engagement. This related to, but not synonymous with, the length of time it takes to complete the questionnaire, with 13 minutes or less being identified as acceptable time (Fan & Yan, 2010). In this study, most of the expert panel and the pilot study participants fed back they took 10-12 minutes to complete the questionnaire and just n4 out of the n20 fed back it took almost 15 minutes. Another factor can be the number of pages. If respondents are advised the survey will take X minutes and they see what looks like a lot of pages, they could lose engagement. This questionnaire (Appendix 7) had 13 pages, with page 13 being the exit from the questionnaire. Another suggestion is that a single page that respondents scroll from top to bottom can be a positive factor

(Fan & Yan, 2010) but there is also an argument that a long page with many items can itself be off-putting. Poor wording and ambiguous questions, or an inadequate range of selectable answers, especially if without an option to select 'other,' can be frustrating and disengage the respondent.

Once the questionnaire was closed, the number of respondents fell short of the required sample size of $n2155$ (the total which includes all the named professions) at a total response of $n412$. There are multiple factors that affect the response rate to a questionnaire. Although it is reported that online questionnaires achieve lower response rate than other forms (Pederson & Nielsen, 2016) which is partly due to reluctance to open unsolicited mail or software diverting to junk mail (Saleh and Bista, 2017), an online platform was the most practical way to reach such a large sample frame. The problem of unsolicited mail was largely avoided by sending through the professional colleges and them providing the link in formats other than just email.

There was an overall response of $n412$ responses to the questionnaire. JISC shows how many times the survey was opened, and at which point they left the questionnaire. The vast majority opened the questionnaire and left on page 1, the respondent information and consent. Ther were $n29$ people left the survey on page 5. While the questions on this page are short and were related, it may have been wiser to have had these over two pages (see Appendix 7). The engagement with the online questionnaire is presented in Table 8.

Table 8: Respondent engagement with questionnaire

Page Number	No. left the survey	Questions on this page
1	1522	Q1 (Information And consent)
2	9	Q2
3	7	Q3
4	8	Q4, Q5, Q6 and Q7
5	29	Q8 – Q20
6	9	Q21
7	9	Q22, Q23, Q24 and Q25
8	5	Q26 & Q27
9	3	Q28, Q29, Q30, Q31, Q32 & Q33
10	4	Q34
11	0	Q35, Q36, Q37 & Q38
12	9	Q39 recruitment to Phase 2. Thanks to participants.
13	411	Questionnaire exit

Although these factors were considered and tested through the expert panel and pilot study prior to circulating the questionnaire, the Covid-19 pandemic also has to be considered. The impact of the pandemic on this research is not quantifiable, but there are aspects to consider, given that the pandemic has significantly over-stretched healthcare resources. 10% of nurses and midwives, and 14% of NHS staff overall, were reported to have been redeployed to intensive care, and a further 11% of nurses and midwives redeployed to non-intensive care areas (Ibbetston, 2021). Staffing levels decreased after the first wave of the pandemic with greater numbers than usual of staff leaving the National Health Service (Palmer & Rolewicz, 2022) and workload has increased. It must be said that there are multiple reasons for staff leaving. With staff reporting intention to leave and citing exhaustion and stress (Palmer & Rolewicz, 2022), and increased numbers of those actually leaving, the material effect is increasing

number of vacant posts, putting further pressure on staff (Kings Fund, 2022). The extra time and energy to engage with a questionnaire may not be readily available, especially during work when breaks are more precious than ever, but which may be limited or not taken due to workload and short-staffing pressure.

3.12 Data Management

Prior to data analysis, it was necessary to ensure that the *n*411 submitted responses were valid. In the initial data management, two respondents were removed from the data set. One was a pharmacist who, through their years of experience and profession, was eligible to undertake the V300 course, and was not a prescriber. They had selected the option "qualification – none" in Q3. This was confirmed when their responses to following questions were unanimously "not applicable". The second respondent removed from the data set was a pharmacy technician. As a profession, pharmacy technicians are not eligible to undertake any prescribing education. Both respondents were excluded due to their failing to meet the inclusion criteria and therefore were ineligible to participate. On further inspection of the data, a third respondent was excluded. They did meet the inclusion criteria – a nurse who held the V300 qualification - and had gone through the whole questionnaire, exiting on the last page, but had stopped answering questions after Q3. This means they had said "yes" to the consent questions which allowed them to proceed, then answered questions 2 and 3 (their profession and year of registration, and their prescribing qualification and year of attainment). All questions after this were skipped so most of that data was missing.

There are choices about how missing data are handled, and consideration was given to the effect on the results (Pallant, 2020). This was considered as missing at random (MAR) because the individual declined to answer the questions and submitted the questionnaire and was therefore within their control (Kang, 2013). Listwise deletion removes the incomplete questionnaire entirely. Depending on the number, the complete questionnaires could be inferred to have a bias as a random subset of the whole sample (Little & Rubin, 2001). Listwise exclusion may not be desirable where there are multiple respondents with missing data. The chosen software was SPSS 27 (IBM, 2019) which has the facility to provide a mean value for a missing value (Pallant, 2020) but this can distort the results. The more missing data there are, the greater the distortion of the results. An option that will give a more accurate analysis is to exclude only where data is missing and include where data has been provided (pairwise deletion). However, this was the only case with missing data, and so many were missing from this case that listwise deletion of this one case was the obvious choice with least distortion of the results.

3.13 Phase 1 Data Analysis

The online resource, JISC was used for the survey and the data was downloaded and analysis undertaken though IBM Statistical Package for the Social Sciences (SPSS) v27 (IBM, 2019). Frequencies were recorded. From the outset it was expected the quantitative data would be descriptive statistics rather than comparative, due to the vast difference in the number of prescribers in each profession. Therefore, the descriptive data are presented as frequencies. These results are presented in Chapter 4.

3.14 Survey Within Mixed Methods

The survey was designed with the principles and quality markers required for a valid and reliable tool used in quantitative methods. It must be remembered that this is part of a mixed methods study and the aim and objectives specify that Phase 1 has a specific purpose – to produce descriptive quantitative data and to use those data to inform the development of Phase 2 of the study. The importance of the points of integration, a key characteristic of mixed methods research, cannot be overstated. The survey development, process and execution were undertaken with the points of integration held as key aspects.

3.15 Phase 2

Phase 2 consisted of individual semi-structured interviews and were conducted with the purpose of exploring the experience of prescribing practitioners, how they perceive their experiences and how those experiences have influenced their practice and views. The qualitative results were used to explain the quantitative results (discussed in detail in Chapter 6). The aim was to recruit prescribing practitioners from each of the given professions, whether actively prescribing or not. Objectives were developed for Phase 2. Although it comes under the remit of the whole research objectives, Phase 2 objectives could not be developed until the data analysis from Phase 1 were completed. The Phase 2 objectives define what was to be achieved to explain Phase 1 results.

The responses and data analysis from Phase 1 have directly informed the development of semi-structured questions for Phase 2, so results from Phase 1 were carried through to Phase 2.

Objectives for phase two:

1) To explore the experience of prescribing practitioners (both experienced and newly qualified).
2) To understand how prescribing practitioners perceive and apply the national competency framework for prescribers.
3) To explore reasons for having never prescribed.
4) To explore how prescribing practitioners experience barriers and facilitators to their practice.

3.15.1 Design and Justification

The use of interviews is to explore in depth the opinions and lived experiences of participants in relation to a specific phenomenon (Alshenqeeti, 2014) and in this study their overall purpose is to explain the data from Phase 1. Advantages and disadvantages of interview design were considered.

Structured interviews, if used inappropriately, may overuse closed questions thereby severely restrict the responses, leading to the possibility of superficial data which raise more questions than answers. Unstructured interviews have the advantage of allowing great freedom to researcher and interviewee. However, in context of this research this degree of freedom is at risk of following the interviewee entirely and not addressing key aspects and the declared objectives. That situation would undermine the first major

point of integration in this mixed method study and render the final point of integration in the discussion (Chapter 6) weak, if it would be possible at all. Semi-structured interviews achieve a balance of depth of exploration, allowing the interviewee to raise points pertinent to their experience, while enabling the researcher to have flexibility, and to provide an outline of critical points to capture data that will answer the research question (Ritchie et al., 2014). However, the possibility of unexpected data introducing a new theme alongside the current themes remained open.

The use of focus groups was considered and rejected. They can provide rich data if approached correctly, especially if holding a series of focus groups rather than a single event (Nyumba et al. 2017). The group should have direct experience of the phenomena, so have enough in common to generate meaningful discussion, while having enough variety that allows different perspectives and opinions (Gill et al., 2008; Acocella, 2012). Possible advantages would be to shorten the length of time of data collection and have sharing of thoughts and experiences encouraged by peer support in the focus group. Possible disadvantages are that, despite skilful facilitation, some may be less inclined to share their experiences within a group, especially if they are uncomfortable with an issue under discussion (Sime & Waterfield, 2019). There was also a possibility that two or more interview participants may happen to know each other, as the researcher selected the sample purposively by profession, length of experience and if never prescribed. Geographical area was not a key variable. While acquaintances or colleagues can be in the same focus group, the researcher would have to consider the possibility of unwillingness to share, or undue influence and assumptions (Ritchie et al., 2014).

Logistically it was simpler to have one to one semi-structured interviews, but there were other compelling reasons to use interviews rather than focus groups. Focus groups can be online but need attendance to make it work. Semi-structured interviews give rich data and have the advantage that participants do not feel in competition with or overwhelmed by others, allowing each individual to participate fully and completely. This was a major reason for selecting semi-structured interviews over running focus groups. It is also true that a focus group can, if skilfully managed, give encouragement to participants in validation of their experience through peer support. There was an increased risk of non-attendance with a focus group. Co-ordinating a mutually convenient date and time with clinicians from across the UK, most of whom were likely to do shift work, was logistically precarious. Even if this had been achieved, if someone was unable to attend at short notice, rearranging a focus group would not be possible, whereas an individual interview was easily rearranged. In fact, this was confirmed during the process as one participant had to change their appointment time by several hours and another participant had difficulty in finding a suitable date and time due to personal circumstances. However, that individual was keen to participate, and an evening appointment was arranged as that suited them most. Because this research is seeking to represent the voice of allied health prescribing professionals as previously underrepresented groups in prescribing research, the risk of losing any participants convinced the researcher that semi-structured interviews was a more suitable qualitative tool than focus groups. Having decided that semi-structured interviews were an appropriate tool for this study, the inclusion/exclusion criteria were set and are shown in Table 9.

Table 9: Inclusion and exclusion criteria for interviews

Inclusion Criteria (Interviews)	Exclusion Criteria (Interviews)
• Dietitians, midwives, nurses, paramedics, pharmacists, podiatrists, physiotherapists and radiographers (diagnostic and therapeutic) who:	• Optometrists
• hold one or more of the following prescribing qualifications: V300, V150 or V100	• Professions not eligible to undertake the prescribing qualifications V300, V150 or V100
• Not known by the researcher	• Any of the otherwise eligible clinicians who have previously known or met the researcher
• Work in the UK	• Work outside the UK

3.15.2 Phase 2 Sampling Strategy

The *n*183 questionnaire respondents who indicated they were willing to be interviewed were downloaded to SPSS v27 (IBM, 2019) with only the data fields that gave their profession, whether they have ever prescribed or not and the year of qualification as a prescriber. Phase 2 used a nested sample, as participants were entirely a subset of Phase 1 respondents. In an explanatory sequential design, the data are related to each other (Creswell & Plano Clark, 2018; Wong & Cooper, 2016). Eight respondents were removed from the list of possible interview participants as they were known to the researcher. A further two ACPs were removed from the list of possible participants who might have been invited to interview specifically because their foundation profession was unknown, and all professions are represented in the interview. To meet the objectives of Phase 2

and the overall research, it is necessary to represent all prescribing professions. Further, from those survey respondents', consideration was given to including newly qualified participants and those who have never prescribed.

3.15.3 Phase 2 Sample size

The sample size for the semi-structured interviews was set at n16 to allow for two of each eligible profession to be included. For the explanatory sequential design, it is not necessary or desirable to have equal sized sample sizes in both phases. This may be the case in a convergent design where it is aimed to merge or transform the data (Driscoll et al., 2007; Creswell and Plano Clarke, 2018) but is not a function of a sequential design. The numerical sample size is important in a quantitative study or phase, but the characteristics of the sample are important in a qualitative study (Onwuegbuzie & Collins, 2007). There was a total of n184 volunteers willing to be contacted for interview. After removal of the n10 unsuitable volunteers (because they were known to the researcher, or their foundation was unknown) a total of n174 volunteers remained. Of these, there were n12 who were newly qualified and n8 who had never prescribed since qualifying (see Table 10).

Table 10: Interview sample frame

Profession	Responses	Removed	Remaining	Of whom newly qualified	Of whom never prescribed	Selected
Dietitians	2	0	2	0	1	2
Midwives	2	0	2	1	0	2
Nurses	144	3	141	5	3	3
Paramedics	7	0	7	2	1	2
Pharmacists	13	2	11	1	1	2
Physiotherapists	6	0	6	0	0	2
Podiatrists	6	3	3	1	1	2
Radiographers – diagnostic	1	0	1	1	1	1
Radiographers – therapeutic	1	0	1	1	0	1
Other – ACP	2	2	0	0	0	0
TOTAL	**184**	**10**	**174**	**12**	**8**	**17**

The process of selecting which volunteers to invite was as follows: There were $n2$ dietitian, $n2$ midwife and $n2$ radiographer volunteers so all those individuals were invited. Of the other professions, selection was made with consideration to including candidates who were newly qualified and never prescribed as well as those who had extensive experience. With that in mind, selections were made at evenly spaced intervals from the data set (for example, out of the paramedics, No.1 and No. 4 were invited from the list). Three nurses and two individuals of all other professions were invited to interview. The pharmacists and midwives did not respond. Only $n1$ nurse, $n1$ physiotherapist and $n1$ paramedic responded.

In the next round of invitations, the non-responders were invited again, but assured that it was their choice if they no longer wished to participate. One pharmacist responded.

In an attempt to make up the initially planned numbers of two from each profession, with scope for three nurses, further invitations were issued to two nurses, *n*1 paramedic and *n*1 physiotherapist. There was no response from the midwives, paramedics or physiotherapists who were subsequently invited. One pharmacist and one nurse responded and were happy to be interviewed. This process was repeated, but no further volunteers came forward. As only *n*2 midwives had answered the questionnaire, there were no others to approach. The final interview sample is shown in Table 11.

Table 11: Final interview sample

Profession	Interviewed	Newly qualified	Never Prescribed
Dietitians	2	0	1
Midwives	0	0	0
Nurses	2	0	0
Paramedics	1	0	0
Pharmacists	1	1	1
Physiotherapists	1	0	0
Podiatrists	2		
Radiographers – diagnostic	1	1	1
Radiographers – therapeutic	1	0	0
TOTAL	**11**	**2**	**3**

3.16 Trustworthiness

Qualitative data cannot be assessed with the same criteria as quantitative data; applying the structure of validity and rigour to qualitative data is unsatisfactory. The more appropriate concept of trustworthiness, replacing the rigidity of objective rigour, is

proposed by Lincoln and Guba (1985). Rolfe (2006) argues that it is not possible to appraise the quality of research (qualitative) with pre-determined strategies. This stems from his argument that it isn't possible to address the diversity of qualitative methods with a single paradigm. Stahl and King (2020) state that trustworthiness is less explicit and defined that its quantitative counterpart, validity. However, there are clear markers of quality in qualitative research that are recommended by qualitative researchers (Braun & Clarke, 2022; Korstjens and Moser, 2018; Nowell et al., 2017):

- Credibility: In this study there was collaboration with senior qualitative researchers in the processes of coding and theme development.
- Transferability: demonstration of process of developing themes.
- Dependability: audit trail to demonstrate details of the whole process.
- Confirmability: reflexivity and audit trail, this is demonstrated in extracts from the researcher's reflexive Journal.

Korstjens and Moser (2018) include reflexivity in this process, but that is not a distinct stage, rather, an ongoing process. Macfarlane (2009) agrees that reflexivity is an important part of researcher integrity as it requires conscious consideration of their position and relationship to the research. A four-phase process is recommended (Ballinger, 2006; Castillo-Montoya (2016 p812) in strengthening reliability on an interview protocol by Phase 1: Ensuring interview questions align with research questions (Appendix 11); Phase 2: Constructing an inquiry-based conversation

(Appendix 12); Phase 3: Receiving feedback on interview protocols, and Phase 4: Piloting the interview protocol (section 3:18).

3.17 Development of interview guide

It had already been considered that the low response rate means that the statistical data is not generalisable to the population. However, accuracy is considered more important than size (Oppenheim, 1992). This has been especially important in a mixed methods study where it has still been possible to use the quantitative data to inform the development of Phase 2.

Similar principles to writing questions for Phase 1 were applied; the interview questions had to be clear and unambiguous. Unlike the questionnaire that was seeking quantitative data and therefore used closed questions, the interview guide used open questions to encourage rich, qualitative data, allowing each participant to talk about what they feel is important from their experience in the given area of enquiry (Zohrabi, 2006). As with Phase 1, questions need to avoid multiple elements to avoid confusion or doubt for the participant in answering and the researcher during analysis (Buckingham & Saunders, 2004; Zohrabi, 2006). A protocol for the interviews (Appendix 11) was developed with the results from Phase 1 informing the researcher which areas need to be developed and explained by Phase 2. The results and question topics were aligned with the objectives to ensure that each one was addressed. The final interview guide shows the semi-structured questions, the prompt questions used to explore more deeply and a space for the researcher to make a note of key words/phrases (Appendix

12). The semi-structured questions began with the general introductory questions, inviting the participant to give an overview of their prescribing career to date. Questions around sensitive subjects (the most sensitive being around making medication errors) were after the half-way point in the interview. After that, there were a small number of questions around topics that were not of a sensitive nature, and interviews concluded with an invitation for the participant to raise anything that was important to them about their experience.

3.18 Phase 2 Pilot

After ethical approval, a pilot of $n2$ interviews was undertaken. The participants were invited from the sample – selected randomly – of those who had indicated they were willing to be interviewed in the Phase 1 questionnaire. They were aware this was for the pilot only and would not be included in the final data analysis. The pilot served to test the semi-structured questions to ensure that, in practice, they were understandable and not leading. The participants were given the same assurance of confidentiality that was given to the participants of the final interviews. Confidentiality has to be observed throughout the process of data collection, storage, and presentation of results to avoid the possibility of deductive disclosure by unwittingly providing details (other than obvious personal details) that allow readers to identify the respondents or participants (Kaiser, 2009). The data produced confirmed that the semi-structured questions were fit for purpose. This was an opportunity for the researcher to consider the appropriate order of the questions before and after the sensitive topic under question. At the same time, there was some leeway to move the order if the participants comments raised a question "early" so it could be addressed and explored at their pace. No adjustments

were made to the interview protocol following the pilot. The pilot interviews also served to prepare the researcher in conducting interviews fluently and confidently. This was apparent in the final interviews with a more neutral and less conversational approach.

3.18.1 Interview procedure

In the questionnaire, respondents were asked to give their preferred means of contact if they were interested in participating in Phase 2. The potential participants were contacted individually and asked if they were still interested in being interviewed. The researcher sent the information sheet (Appendix 13) and consent form (Appendix 14) to respondents who confirmed their willingness to participate. At this stage, participants were informed that the signed consent form had to be received by the researcher prior to the interview taking place. All participants were invited to ask any questions at any point from this initial contact up until the time of the interview.

All interviews took place during July and August 2022 on Microsoft Teams. The choice of this platform was partly due to the wide geographical area across the UK, which made travel prohibitive. Also, while no lawful travel restrictions were in place at this time, the incidence of morbidity of Covid-19 was rising in early July (Our World in Data, 2022) so person to person contact was not desirable. This was preferable to telephone interviews where non-verbal communication would be lost, and therefore MS Teams, with video and audio afforded the ability to establish relationship and enhanced communication with the researcher.

At the beginning of the interview, the researcher introduced herself, reiterated the confidentiality of the interview and reminded them of the purpose of the interview and research. It was explained that the interview was being recorded for transcription. These recordings were stored securely and not accessible to anyone except the researcher. The researcher made brief notes in an individual copy of the interview guide of key words or short phrases that helped to note key points to explore more deeply with probe questions, so they were not forgotten while the participant was speaking. As recommended by Allmark et al. (2009) consent was regarded as a continuous process. This is reflected in some of the signposting of sensitive questions around medication errors, and being explicit what this question was seeking.

Silverman (2011) discussed different models of interviewing. This research used an interpretivist approach for the interviews, as appropriate for this phase of the study. While Silverman (2011) dismissed an 'emotionalist' approach as uncritical and warns that a constructionist approach can have a narrow focus. However, with a robust interview protocol and process and transparency and strong analysis of the data, interviews are an effective research tool (Braun & Clarke, 2022a; Ritchie et al., 2014).

3.18.2 Transcription

There are two approaches to transcription: naturalised and denaturalised. Naturalised, or verbatim, is recording every sound and utterance and noting changes of tone or pace of speech and not removing hesitation, non-verbal elements, or stumbling over words. The alternative is denaturalised, which is to remove the repeated words, stutters and

verbal stumbles. Microsoft (MS) Teams has a transcription function which assisted the researcher in beginning analysis immediately and it is a literal transcription – revisiting the video can align the verbal transcript with the non-verbal information. There is argument that a naturalised transcript, with stutters and non-verbal information, do not add enough to data analysis, and is thought to sometimes detract from the substantial meaning as they can be difficult to interpret (Oliver, Serovich & Mason, 2005).

In the transcription, the researcher opted for a naturalistic approach and kept a raw copy of the transcript, including repeated words. Only two alterations were made to the raw transcripts. The first is that every time the person speaking pauses slightly, MS Teams makes a new paragraph and tags their name and the amount of time into the recording. This results in a run where the same speaker is tagged for multiple paragraphs. In these instances, the name and time tags were removed so the speaker and time were identified only at the places where a different person began speaking (either the researcher or participant). The second alteration was correction of punctuation or where MS Teams had inserted an incorrect word. For example, MS Teams occasionally puts a sentence break mid-sentence, or mishears a word and inserts an incorrect one, especially with some medical terminology (for example, MS Teams wrote "email" instead of "EMIS," "Metro Club" instead of "Metoclopramide," or "one mechanism" instead of "on metronidazole."). Microsoft Teams also frequently inserts the word "and" when it was not spoken, usually at points of a pause or hesitation in speech. These corrections were achieved by playing back the recorded interview and simultaneously reading the transcript. While the MS Teams transcript had a high degree of accuracy, this process eliminated the errors which were nonsensical and not what

was actually said. Part of this process is care with punctuation as alteration of punctuation potentially alters the meaning of what is said (McLellan, MacQueen & Neidig, 2003). This principle was considered carefully so the final transcripts followed what was actually said. The process of reading and correcting while listening to the recording was repeated until the MS Teams transcript errors were all eliminated. Neither of these alterations to the raw transcripts changed the original meaning or content. In fact, the inaccurate words in the transcript were changes to the content and if left, would have muddied the meaning of what was said. It was not deemed necessary to spend the time it would have taken to remove filler phrases (such as "you know," "like," "so, yeah,"). The result would not have been of enough benefit to justify the time and would possibly have raised questions about the researcher altering the text.

3.19 Phase 2 Data Analysis

3.19.1 Reflexive Thematic Analysis

The process for data analysis of Phase Two was structured by reflexive thematic analysis. To achieve structured and rigorous interpretation, the researcher used reflexive thematic analysis for meaning rather than content description (Braun & Clarke, 2006, 2022a). This process, due to the explanatory sequential design, started with deductive codes from Phase 1 data and then continued with inductive coding to systematically develop concepts, rather than wholly pre-determining codes and assigning the data. The researcher position is also explicitly recognised which is necessary for transparency and to demonstrate the process. Coding and theme development is ultimately about meaning and not about 'accuracy' – this position acknowledges that there are multiple ways to interpret or find meaning in the data. In this way, how the researcher is situated

is used as a strength in the process where experience and insight can help find depth of meaning (Braun & Clarke, 2022a; Larkin, 2022; Noble & Smith, 2014). The researcher used the 6-phase process outlined by Braun and Clarke (2022a) which involves methodical, repeated review of the data, codes and themes. It is not a linear process and the checks and rechecks demonstrates transparency (Vaismorad, Jones & Snelgrove, 2016). Part of the process was keeping a reflexive Journal. The researcher kept a journal to be conscious of any personal responses and feelings during the research process. Similarly, any reactions to participants or the experiences they shared were noted to maintain clarity and avoid inadvertently imposing personal opinions. Appendix 17 gives a short excerpt from the researcher's reflexive Journal that was written immediately after one of the interviews. It does show a little of the tension that can arise for a researcher in gaining the rich data required and the need to avoid harm and ethical protection of the interviewee, which is discussed by Allmark et al. (2009). There was considered balance between asking for the required information and 'looking after' the interviewee to check that no feeling of inadequacy had been raised for the interviewee. At the same time, the researcher's personal and professional experience was useful in understanding the value of questions that were to be explored and the significance of participant responses.

3.19.2 Familiarisation with Data Set

This process involved listening to each recorded interview with the transcript that had been generated by MS Teams. Corrections were made as described in 3.18.2 and the reading was repeated to ensure all corrections had been made. Also, a part of this process was keeping a reflexive journal (as outlined in 3.19.1) to note personal

responses and thoughts and these were also noted in separate copies of individual transcripts. Repeated reading of the transcripts and listening to the recorded interviews was directly instrumental in the researcher becoming closely familiar with the data set. This familiarisation continued throughout the process of coding.

3.19.3 Coding

The generation of codes was accomplished through several rounds of reading through the transcripts. As the semi-structured interview guide was informed by objectives and the quantitative data from Phase 1, the initial codes were deductive. One interview (chosen randomly) was sent to an experienced qualitative researcher who was not on the supervisory team and had no previous involvement in this research. The deductive codes were shared, and the interview was coded independently by the researcher and the senior qualitative researcher. Subsequently, during discussion and comparison, the inductive codes showed that each had defined were identical or near identical, where the ascribed meanings were the same. There was discussion around the one difference in coding where the senior qualitative researcher had clustered of a variety of codes under "Barriers." The researcher had the same items but had not clustered them under "Barriers" (Appendix 18). It was agreed that the same codes were identified and that overall, this was not a major difference and that the clustering would be valid at the point of coding or at the point of generating initial themes. The researcher has other items clustered under deductive codes to demonstrate the nuances of the data. Finally, the researcher decided against a cluster of codes under "Barriers", even though that would have identified a common thread for diverse items, because it encompassed so many individual codes that it was felt that nuance was potentially muted.

Although there are multiple approaches to thematic analysis, a coding framework is not specifically part of the six phases of reflexive thematic analysis (Braun & Clarke, 2022a). It is important to note that while Braun and Clarke (2022b) also note the process is not fixed, they caution against muddling the process by using any and all techniques under the impression this would be more 'accurate', especially when accuracy is a positivist measure. A code books was used in Phase 1 of this mixed method study (see Appendix 10); it must be noted that code books are used in quantitative research with a specific purpose: to assign a succinct definition or instruction that will be used for the computer programme to convert the data (Pallant, 2020). A quantitative code book is written ahead of the data analysis and means the researcher has an accurate record of what the codes understood by the computer programme represent (Pallant, 2020). However, a coding framework was used by the researcher to organise and present codes and was written during the process of coding as part of transparency in the process. There were a small number of deductive codes, as drawn from the research objectives and Phase 1 dataset, and these were used from the first version of the coding framework (Appendix 19). Further inductive codes were added under these to provide detail and capture different nuances of meaning and indictive codes were added throughout the process of familiarisation with the data set.

3.19.4 Generating Initial Themes

Once the coding phase was complete, consideration of patterns was done manually. These initial charts were not named but arranged in clusters that the researcher, with the knowledge and experience of being a nurse prescriber and cognisant of the process of reflexive thematic analysis, understood to be related to each other. In the subsequent

rounds, these codes were refined, and some changes were made, moving codes from one cluster to another. Other ways of clustering the codes were explored for the most meaningful arrangement. Only at this point did the researcher begin to generate candidate themes.

3.19.5 Developing and Reviewing Themes

Manual coding and analysis were used, as this gave the researcher a strong visual overview of the codes and coding process. Detail of how codes were collapsed are given in Appendices 19 and 20. Once this was done, the full data set was re-read in their code clusters. This served to ensure that the captured data was coded appropriately. It was also an opportunity to revise any codes that were redundant or would be better served by being merged with another code. From there, the candidate themes were revisited and revised by returning to the full data set to ensure meaning was defined. The intent was to achieve deep insightful analysis, therefore the researcher worked to develop meaning laden themes as opposed to content descriptors (Braun & Clarke 2022a, 2022b; Vaismoradi et al., 2016). Other themes were considered, especially in light of themes that are commonly presented in current literature. For example, barriers and facilitators to prescribing are common themes in the current literature and encompass multiple factors which are effective in identifying important aspects of prescribing. While Braun and Clarke (2022b) caution that content descriptors as themes can be predicted at the beginning of the process rather than defined from the data, predictability in itself is not sufficient reason to reject a theme if it does, in fact, speak about the underlying meaning of the data.

Predictable, content descriptor themes in this study would have been barriers and facilitators, and intrinsic and extrinsic influencers. As a novice researcher, to test these, codes were rearranged into different clusters. It was apparent that trying to fit codes into predetermined themes was weak. The fact that there were barriers in most codes, and a proportion (but not all) of those had counterpart facilitators, meant it was a possibility to use those as themes. The results were similar for considering intrinsic and extrinsic influences.

3.19.6 Refining, Defining and Naming Themes

The point of refining and finalising themes produces the way the final 'story' is told. Each theme was reviewed to ensure that there is a strong central idea and that they work together to be able to discuss the data with depth and clarity. Once the candidate themes were defined the researcher returned to the detail of the data set. The whole data set was re-read in their code clusters and reviewed for the strength of the codes and themes. At this point, the final codes and candidate themes were reviewed by the researcher and one of the supervisory team, an experienced qualitative researcher who was not situated in this research. The interviews were read by both prior to meeting. The researcher and the supervisor each wrote down the meaningful and important findings from the interviews, and near-identical findings were identified. From there, the idea behind each candidate theme was discussed and it was agreed that they did not fully express the deeper meaning that underlay them. Through discussion of the findings and what they meant, the candidate themes were refined, and the final themes were defined (Appendix 21). This process of discussion and review was a measure in credibility and transferability. Throughout this process the researcher kept a personal

reflexive Journal, and an excerpt is provided in Appendix 22 regarding the coding and generation of themes.

3.20 Member checking

Member checking is recommended by Stahl and King (2020) because it is thought to verify the validity of the researcher's interpretation, but Braun and Clarke (2022b) disagree and caution that it can deviate from the researcher's interpretation and insight. This is a reminder that validity and accuracy are quantitative markers and are not suitable as qualitative markers. As Braun and Clarke (2022a) explain, themes do not emerge as though they are merely hidden, they are defined and refined by the researcher. Use of member checking can suggest that there is a "correct" interpretation. Indeed, the researcher may have insights that the participants themselves may not have had where the researcher has insight through overview of the entire dataset and supported by the understanding of being a situated researcher. McConnell-Henry, Chapman and Francis (2011) also warn against member checking, advising that participants may say what they think the researcher wants them to say. The researcher decided not to use member checking in this study to avoid this potential distortion as it was felt that member checking did not align well with a situated and reflexive researcher building and defining codes and themes.

3.21 Saturation

Saturation is frequently used in qualitative data often as justification to discontinue data collection. Data saturation, often cited when using qualitative interviews as the research tool, considers how much data is needed until nothing new is apparent (Saunders, et al.,

2018). While it is not always clear how this relates to sample size and recruitment (Hennink & Kaiser, 2022) the concept of saturation being reached in a given number of interviews is based on the work of Morgan et al. (2002) whose work predicted saturation would be achieved within six interviews. However, this is a controversial measure as it requires a predictive value of how many interviews need to be conducted before beginning. Legard, Keegan and Ward (2003) suggest that the depth of exploration within the individual interviews should be considered in achieving saturation at an individual level as well as across the entire dataset. This concurs with Fusch and Ness (2015) that quality of data is a key concept, not just quantity and differs from the assumption no new data would be found by increasing the sample size. Braun and Clarke (2021) point out that judgment about saturation is subjective, in keeping with reflexive thematic analysis, because themes are generated actively by the researcher, they do not passively emerge fully formed (Braun & Clarke 2022b). Therefore, depth of probing and analysis within this research to aim for sufficiency of data to address the research problem, rather than claiming saturation or that there are no other useful data to be found beyond those collected. In considering if saturation is necessary, and what type of saturation is appropriate Thorne (2020, pp3) suggests considering:

"...[what] *new questions about the phenomena we might not have thought to ask without such in-depth inductive investigation."*

Saturation is often meant to convey that no new information will be found in further data collection (data saturation). and frequently used in relation to thematic analysis. The caution is that if this decision is made during data collection rather than as part of

analysis, this could involve a predictive value about uncollected data (Saunders et al. 2018). Guest, Namey and Chen (2020) ask how 'no new information' is decided, as this judgement is subjective. This acknowledgement of subjectivity in achieving data saturation is supported by Clarke (2022) who adds that judgement of saturation is based on researcher data analysis and interpretation. Theoretical saturation establishes categories, and the point of saturation cannot be pre-determined (Gerrish & Lathlean, 2015). The use of theoretical saturation in Grounded Theory looks for congruence with its philosophical assumptions and enough data to address the defined categories that enable the development of the theory in question (O'Reilly & Parker, 2013; Thorne, 2020). In other words, in the discipline of grounded theory the researcher asks if there enough data to illustrate the theory (Saunders, et al., 2018).

3.23 Summary

This chapter has provided the detail of the philosophical assumptions that have helped construct the methodological stance, and the ground bed for the methods used to answer the research question. The first phase was a survey that used an original questionnaire and was made available nationally and provided descriptive quantitative data. These results are presented in Chapter 4 and were used to inform the development of the interview protocol for Phase 2, qualitative interviews. Reflexive thematic analysis has been identified as the appropriate method of analysis for the Phase Two results, which are presented in Chapter 5.

Chapter Four

PHASE ONE RESULTS

4.1 Introduction

The previous chapter provided detail of the philosophical position and assumptions of the researcher. This informed the substance of the research question, use of pragmatism as the paradigm and from there the appropriate methodological processes that were adopted to meet the aim and objectives. The first part of this chapter presents the results from Phase 1. Chapter 5 will present results from Phase 2.

4.2 Respondent Demographics

The population of prescribing clinicians by profession in the UK is shown in Table 12 with the dates that these figures were obtained after submitting the Freedom of Information (FOI) requests (Appendix 4).

Table 12: Population: Numbers of qualified independent, supplementary & community prescribers

Profession	No. of Independent / Supplementary prescribers	No. of Independent prescribers	No. of Supplementary prescribers	No. of Community Prescribers (V100 and V150)	Total	Date statistics updated
Dietitian			142		142	Mar 2021
Nurses, including Community Practitioners	49,370	1185 (V200)		41,166	91,721	May 2021
Midwives	592			1743	2335	April 2021
Paramedic	809				809	Mar 2021
Pharmacist	954	9903	281		11138	Mar 2021
Physiotherapist	1379		127		1506	Mar 2021
Podiatrist	465		86		551	Mar 2021
Radiographers, therapeutic and diagnostic	138		167		305	Mar 2021
					108,507	

4.2.1 Respondents by Profession

Table 13 shows the number of respondents by profession. One participant who selected "Profession – other" explained that they are an ACP physiotherapist, so have, therefore, been counted with the physiotherapists. One ACP health visitor has been identified as "Other – Health visitor". One participant is dual-qualified and practising as a nurse and paramedic. This was more problematic as it was important to avoid presenting the same information and it is not known if they are currently practicing in both roles or just one, but it is still necessary to acknowledge this unusual and valid status. Therefore, this is identified as "Other – nurse/paramedic." This left n4 (1%) respondents who identified

as ACP of unknown profession. The Advanced Critical Care practitioner has been included with these three, as it cannot be assumed this indicates a nurse, paramedic, physiotherapist or other profession. These have been identified as "Other – unknown (ACP)."

Table 13: Respondents by profession

Profession	Final No. Respondents
Dietitians	5 (1.2%)
Midwives	2 (0.5%)
Nurses	339 (83.1%)
Paramedics	14 (3.4%)
Pharmacists	13 (3.2%)
Physiotherapists	13 (3.2%)
Podiatrists	13 (3.2%)
Radiographers – diagnostic	2 (0.5%)
Radiographers – therapeutic	1 (0.2%)
Other – unknown (ACP)	4 (1%)
Other – health visitor	1 (0.2%)
Other – nurse and paramedic	1 (0.2%)
Total	**408**

The vast majority of respondents, n373 (91.4%) work in the NHS, with just n9 (2.2%) working only in private practice and n23 (5.6%) working in both sectors.

The demographics of the sample of n408 respondents are given below, by age (Table 14), sex (Table 15), ethnicity (Table 16) and geographical area (Figure 3). The majority of respondents identified themselves as women, n385 (87%) and just n49 (12%) as male.

There were *n*4 (1%) who preferred not to say. This ratio is similar to the national ratio of female/male NHS employees, which is 88.6% female to 11.4% male (NHS England, 2021). This is also reflected in the nursing workforce, with a ratio of 89% female to 11% male (NMC, 2023).

Table 14: Respondents by age

Answer Choices	No. Respondents
Age 20-29	2 (0.5%)
Age 30-39	74 (18.1%)
Age 40-49	147 (36%)
Age 50-59	148 (36.3%)
Age 60-69	36 (8.8%)
Prefer not to say	1 (0.2%)
Total	**408**

The sample is mainly from England and predominantly White British, despite the fact that healthcare professionals are very diverse (Gov.UK, 2023).

Table 15: Respondents by ethnicity

Answer Choices	No. Respondents
White ethnicities	359 (88%)
Any other mixed ethnicity	3 (0.7%)
Asian, South Asian, East Asian	16 (3.8%)
Black / African / Caribbean	7 (1.6%)
Any other ethnic group	11 (2.7%)
Prefer not to say	11 (2.7%)
Not answered	1 (0.2%)
Total	**408**

Table 16: Respondents by Geographical Area
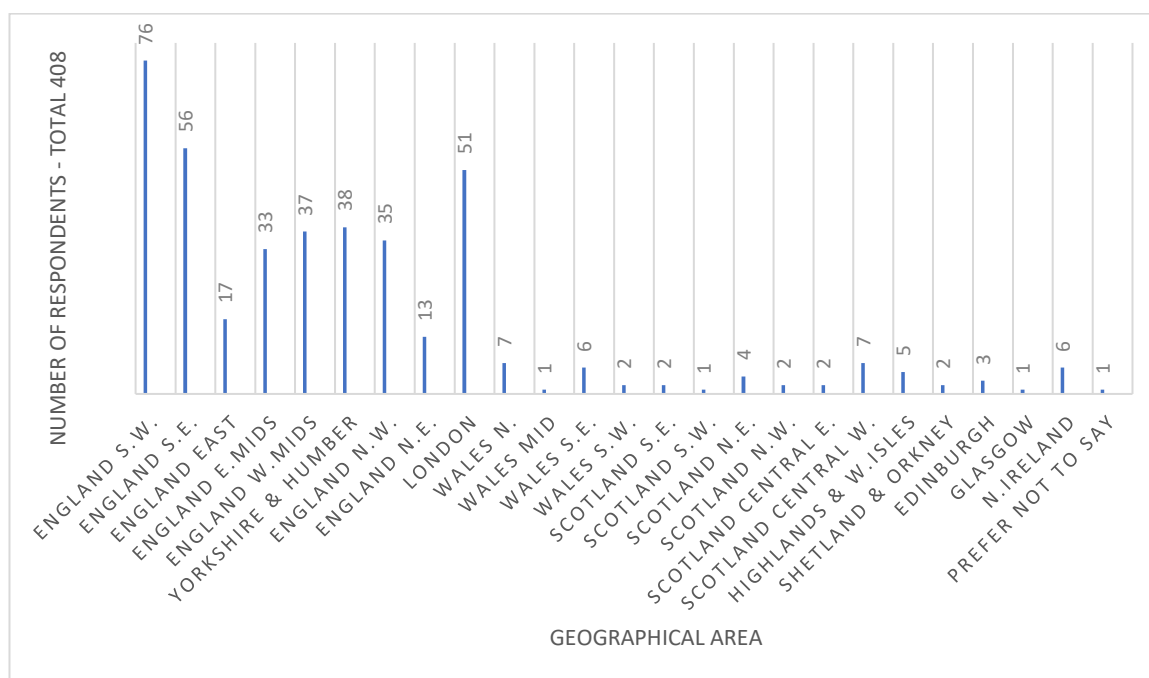
4.3.2 Prescribing Qualifications

When respondents were asked about their prescribing qualification, they were invited to select all that applied to them, as it is possible to take a community prescribing qualification (V100 and/or V150) and later the independent/supplementary qualification (V300), or for some professions to qualify first as supplementary only and later convert to independent. Therefore, the total numbers in Table 17 are greater than the total number of respondents. A definition of the qualification was given in Question 3 of the questionnaire (Appendix 7).

Table 17 presents the number of declared prescribing qualifications held and the corrected numbers. Anomalies were found at two points. Those who had declared "other" qualification gave a free text explanation of their qualification. These n3

identified their prescribing qualifications as: a nurse practice certificate, pharmacy independent and supplementary prescribers; and podiatry independent and supplementary prescribers. On checking their answers to the remainder of the questionnaire, it was clear that all three had been appropriately prescribing as independent prescribers, so they were removed from "other" and added to V300 independent and supplementary prescribers. For a similar reason, $n5$ were moved out of the V300 supplementary prescribers only column, also into V300 independent and supplementary because all $n5$ were nurses. The rest of their answers in the questionnaire confirmed they were all practicing as independent prescribers. There was $n1$ "other" respondent who provided less clear information. The only qualification they declared was V300 SP only, which is not possible for a nurse, and their clinical practice is in the community. A little later in the questionnaire this respondent indicated they practice as an independent and a community prescriber. Due to this conflicting information, this response has been listed as qualification unknown in Table 17.

One diagnostic radiographer selected two qualifications – V300 SP only and V300 IP & SP but, as a diagnostic radiographer, is currently legally only able to hold V300 SP qualification and will not be able to convert their V300 to include independent prescribing until there is a further amendment to the law; therefore, the V300 independent and supplementary prescribing was removed. As they had also, correctly, declared V300 supplementary prescribing only no addition had to be made to a different column.

There are *n*42 respondents who reported dual qualifications; all but one were DNs who first undertook either V100 or V150 and then later the V300 independent and supplementary prescribing. One respondent held V150, V100 and V300 independent and supplementary prescribing qualifications. The other respondent, an allied health professional, had first taken the V300 supplementary prescribing only, and later converted so gained V300 independent and supplementary prescribing.

Table 17: Prescribing qualifications

Qualification	V100	V150	V300 IP & SP	V300 SP only	Other	Unknown	Total
Numbers of respondents	27 (6.6%)	16 (3.9%)	387 (94.9%)	7 (1.7%)	0	1 (0.2%)	438 (107.4%)

Further to asking which prescribing qualification they held, respondents were asked in separate questions to identify their prescribing roles; that is, if they had ever prescribed as an independent, supplementary or community prescriber. These are presented in Table 18.

Table 18: Respondents' declaration of prescribing roles

Answer choices	Independent prescribing	Supplementary prescribing	Community prescribing
Yes	379 (93%)	64 (15.7%)	94 (23%)
No	22 (5.4%)	324 (79.4%)	268 (65.7%)
N/A	4 (1%)	13 (3.2%)	28 (6.9%)
I don't know	1 (0.2%)	6 (1.5%)	15 (3.7%)
Not answered	2 (0.5%)	1 (0.5%)	3 (0.7%)
Total	**408**	**408**	**408**

There are *n*6 (1.5%) respondents, all nurses, who said they were unsure if they have prescribed as a supplementary prescriber. All *n*6 also said they had prescribed as an independent prescriber. However, only *n*5 (1.2%) of these had undertaken the V300 while the other had undertaken the V150 (non-specialist community prescriber) which is specifically a community prescriber qualification, not a supplementary prescriber qualification. There is *n*1 (0.2%) participant who selected "I don't know" to the question asking if they had practiced as an IP. There are *n*15 (3.7%) respondents who stated they were unsure if they had prescribed as a community prescriber. Of these, *n*3 (0.7%) had also expressed uncertainty if they had ever prescribed as a supplementary prescriber. These are *n*12 (3%) nurses, *n*2 (0.5%) podiatrists and *n*1 (0.2%) dietitian all of whom, *except* the dietitian, stated they had prescribed as an IP. Of these *n*15 (3.7%) respondents, *n*3 (0.7%) are community nurses. Separate questions with identical wording (Appendix 7) were used to ask about the frequency of prescribing in the three different prescribing roles, summarised in Table 19.

Table 19: Frequency of prescribing, by prescribing role

Prescribing Frequency	Independent Prescribing *n*390	Supplementary Prescribing *n*141	Community Prescribing *n*115
Most working days	312 (80%)	18 (12.7%)	30 (26.1%)
Once or twice a week	32 (8.2%)	4 (2.8%)	12 (10.4%)
Once or twice a month	14 (3.6%)	5 (3.5%)	6 (5.6%)
Less frequently	5 (1.3%)	19 (13.5%)	13 (11.3%)
I have never prescribed	8 (2.1%)	73 (51.8%)	44 (38.3%)
I have stopped prescribing	17 (4.4%)	7 (5%)	6 (5.6%)
Prefer not to say	0	1 (0.7%)	1 (0.9%)
I don't know	1 (0.3%)	6 (4.3%)	1 (0.9%)
Not answered	1 (0.3%)	8 (5.7%)	2 (1.7%)

Table 20 shows the frequency of independent prescribing across the different professions of the respondents. Those who indicated N/A in frequency of independent prescribing were checked and these were individuals who hold supplementary prescribing status only, community qualifications only or who had moved into non-clinical roles. Out of the n23 (5.6%) individuals – community prescribers - who do not hold a V300 qualification, there are n4 (1%) who declared IP practice. Of these, n2 (0.5%) declared they had prescribed as an independent prescriber and all n4 declared frequency of independent prescribing as either "most working days" and "stopped prescribing as an independent prescriber." The other n2 (0.5%) said they had not prescribed as independent prescribers but gave frequency as "most working days" and "Less frequent" (less than 1-2 times a month). One of these also declared prescribing as a supplementary and community prescriber on most working days.

Table 20: Frequency of independent prescribing, by profession

Frequency of Independent Prescribing	Dietitians *n5*	Health-Visitors *n1*	Midwives *n2*	Nurses *n328*	Paramedics *n14*	Pharmacists *n13*	Physiotherapists *n13*	Podiatrists *n13*	Radiographers *n3*	Other *n5*
Most working days	0	0	1 (50%)	273 (83.3%)	13 (93%)	8 (61.5%)	6 (46.2%)	5 (38.5%)	1 (33.3%)	5 (100%)
Once or twice a week	0	0	1 (50%)	20 (6.1%)	0	3 (23.1%)	6 (46.2%)	3 (0.7%)	0	0
Once or twice a month	0	0	0	10 (3%)	0	0	1 (7.7%)	4 (30.8%)	1 (33.3%)	0
Less frequently	0	0	0	5 (1.5%)	0	0	0	0	0	0
I have never prescribed	0	0	0	4 (1.2%)	0	2 (15.4%)	0	0	1 (33.3%)	0
I have stopped prescribing	0	0	0	13 (4%)	1 (7%)	0	2 (15.4%)	1 (7.7%)	0	0
Prefer not to say	0	0	0	0	0	0	0	0	0	0
I don't know	0	0	0	1 (0.3%)	0	0	0	0	0	0
Not answered	0	0	0	2 (0.6%)	0	0	0	0	0	0

Table 21 shows the frequency of supplementary prescribing across the different professions of the respondents. There were *n*46 who declared some frequency of prescribing as supplementary prescribers (most working days, once or twice a week, once or twice a month or less frequently).

Table 21: Frequency of supplementary prescribing by profession

Frequency of Supplementary Prescribing	Dietitians *n5*	Health-Visitors *n1*	Midwives *n2*	Nurses *n328*	Paramedics *n14*	Pharmacists *n13*	Physiotherapists *n13*	Podiatrists *n13*	Radiographers *n3*	Other *n5*
Most working days	2 (40%)	1 (100%)	1 (50%)	14 (3.6%)	0	0	0	0	1 (33.3%)	0
Once or twice a week	2 (40%)	0	0	2 (0.5%)	0	0	0	0	0	1 (20%)
Once or twice a month	0	0	0	2 (0.5%)	0	0	0	1 (7.6%)	1 (33.3%)	0
Less frequently	0	0	0	14 (3.6%)	3 (21.4%)	1 (7.6%)	1 (7.6%)	1 (7.6%)	0	0
I have never prescribed	1 (20%)	0	0	52 (13.5%)	4 (1%)	1 (28.6%)	4 (30.8%)	7 (53.8%)	1 (33.3%)	1 (20%)
I have stopped prescribing	0	0	0	5 (1.5%)	0	0	1 (7.6%)	0	0	0
Prefer not to say	0	0	0	1 (0.3%)	0	0	0	0	0	0
I don't know	0	0	0	5 (1.5%)	0	0	1 (7.6%)	0	0	0
Not answered	0	0	0	8 (2.4%)	0	0	0	0	0	0

Table 22 shows the frequency of community prescribing across the different professions of the respondents. There were *n*61 (15%) respondents who declared some frequency of community prescribing. There are *n*6 nurses who said they had never prescribed as a community prescriber but indicated frequency of community prescribing as either "less frequent" (than once or twice a month) or "most working days" and *n*1 (0.2%) who was unsure if they had ever prescribed as a community prescriber, who gave frequency of community prescribing as "most working days." There were *n*43 of clinicians holding V300 qualification who declared they were prescribing as community prescribers.

Table 22: Frequency of community prescribing by profession

Frequency of Community Prescribing	Dietitians *n5*	Health-Visitors *n1*	Midwives *n2*	Nurses *n328*	Paramedics *n14*	Pharmacists *n13*	Physiotherapists *n13*	Podiatrists *n13*	Radiographers *n3*	Other *n5*
Most working days	0	0	0	28 (8.5%)	1 (7.1%)	0	0	0	0	4 (80%)
Once or twice a week	0	0	0	10 (3%)	0	0	1 (7.6%)	0	0	0
Once or twice a month	0	0	0	6 (1.8%)	0	0	0	1 (7.6%)	0	0
Less frequently	0	0	0	12 (3.7%)	1 (7.1%)	0	0	0	0	0
I have never prescribed	0	0	0	34 (10.4%)	2 (14.3%)	1 (0.2%)	2 (15.4%)	7 (53.8%)	1 (33.3%)	0
I have stopped prescribing	0	0	0	5 (1.5%)	0	0	0	0	0	0
Prefer not to say	0	0	0	1 (0.3%)	0	0	0	0	0	0
I don't know	1 (20%)	0	0	6 (1.8%)	0	0	1 (7.6%)	1 (7.6%)	0	1 (20%)
Not answered	0	0	0	2 (0.6%)	0	0	0	0	0	0

The number of items prescribed per week are shown in Table 23. This question was answered by 100% of respondents.

Table 23: Number of items prescribed weekly
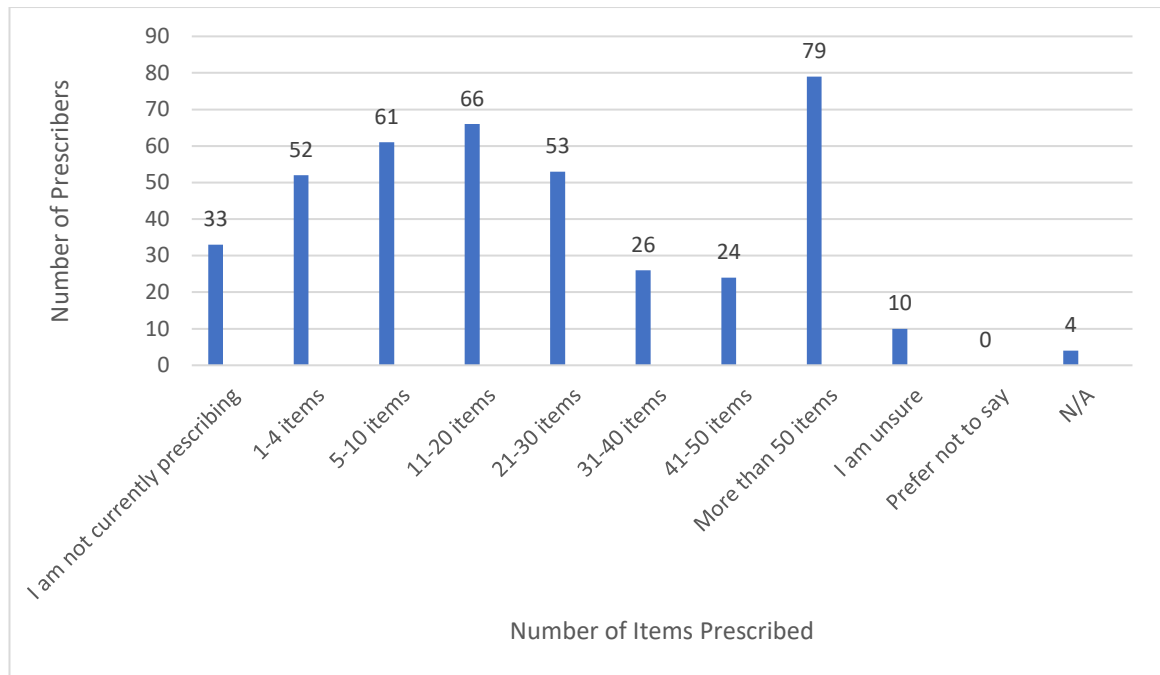
Respondents were asked to select the appropriate bracket to show their contracted working hours, shown in Table 24. This was answered by n406 (99.5%) respondents, with n256 (62.7%) working full time. The "Other" column has n5 respondents. These are the n4 respondents who gave their profession as Advanced Clinical Practitioner without identifying their clinical profession, and the n1 respondent who is dual-qualified as a nurse and paramedic.

Table 24: Contracted hours per week

Hours Worked	Dietitians *n5*	Midwives *n2*	Nurses *n328*	Paramedics *n14*	Pharmacists *n13*	Physiotherapists *n13*	Podiatrists *n13*	Radiographers *n13*	Health Visitors *n1*	Others *n5*	Total
Full time (35+ hours)	5 (1.2%)	2 (0.5%)	207 (50.7%)	8 (2%)	8 (2%)	9 (2.2%)	9 (2.2%)	3 (0.7%)	0	5 (1.2%)	**256 (62.7%)**
Part time, 25-34 hrs/week	0	0	81 (19.9%)	3 (0.7%)	2 (0.5%)	3 (0.7%)	2 (0.5%)	0	0	0	**91 (22.3%)**
Part time, 13-24 hrs/week	0	0	35 (8.6%)	1 (0.2%)	3 (0.7%)	0	0	0	1 (0.2%)	0	**40 (9.8%)**
Part time, up to 12 hrs/week	0	0	14 (3.4%)	1 (0.2%)	0	1 (0.2%)	2 (0.5%)	0	0	0	**18 (4.7%)**
Not answered	0	0	2 (0.5%)	0	0	0		0	0	0	**2 (0.5%)**

To understand the clinical areas that respondents practised in, choices of clinical practice were given as generic clusters, but including an option for "other" for any respondents who felt their practice was not represented. See Table 25 for those who work principally with children and young people, and Table 26 for those working principally with adults.

Table 25: Children and young people - clinical areas of work

CYP Area of Clinical Practice	No. Respondents *n*115
Community	33 (28.7%)
Emergency / urgent care	39 (34%)
End of Life	2 (1.7%)
Long term conditions (specialist)	4 (3.5%)
Mental health	2 (1.7%)
Medicine, general	10 (8.7%)
Oncology	1 (0.9%)
Surgical	6 (5.2%)
Other	
Acute care / outpatients	1 (0.9%)
Clinical research	1 (0.9%)
Critical Care	2 (1.7%)
Education	1 (0.9%)
General practice	10 (8.7%)
Haematology	1 (0.9%)
Paediatrics (area not given)	1 (0.9%)
Neonatal	1 (0.9%)

Table 26: Adult - clinical areas of work

Adult Area of Clinical Practice	No. Respondents *n*348
Aesthetics	2 (0.6%)
Community	60 (17.2%)
Emergency / urgent care	60 (17.2%)
End of Life	5 (1.4%)
Long term conditions (specialist)	24 (6.9%)
Mental health	3 (0.9%)
Midwifery	2 (0.6%)
Medicine, general	25 (7.2%)
Oncology	6 (1.7%)
Primary Care	140 (40.2%)
Surgical	21 (6%)
Other	
Acutely deteriorating / cardiac arrest	1 (0.3%)
Cancer and palliative care, and upper GI benign diseases	1 (0.3%)
Critical care	1 (0.3%)
Education	2 (0.6%)
Elderly care	3 (0.9%)
Endoscopy	1 (0.3%)
Forensic LD and MH	1 (0.3%)
Gastroenterology	3 (0.7%)
GUM & family planning	4 (1.1%)
Gynaecology	2 (0.6%)
Haematology	2 (0.6%)
HIV	2 (0.6%)
Hospital@Night	1 (0.3%)
Immunology / allergy	1 (0.3%)
Intestinal failure	1 (0.3%)
Learning disability	1 (0.3%)
MSK	1 (0.3%)
Ophthalmology	2 (0.6%)
Pain	3 (0.9%)

There were *n*33 (8.1%) respondents working principally with adults selected the "other" option. Table 30 shows the options offered in the survey and the additional options added by respondents. A small number of the "other" options were consolidated with the options that were provided in the questionnaire.

Table 27 shows the terms used by respondents and how they were moved into the provided choices. This was done only when their description was a clear fit with the provided option.

Table 27: Clustering of clinical areas of work

Term used by participant in "other"	Moved to option provided in the survey	No. Respondents
Cardiology	Long term conditions (specialist)	1 (0.2%)
Diabetes	Long term conditions (specialist)	1 (0.2%)
General medicine and LTC	Medicine, general	1 (0.2%)
General Practice	Primary care	3 (0.7%)
Home vent & respiratory	Long term conditions (specialist)	1 (0.2%)
Elderly care / frail elderly (community) / older people (acute & community)	Elderly care	3 (0.7%)
Palliative care	End of Life	1 (0.2%)
Renal	Long term conditions (specialist)	
Respiratory	Long term conditions (specialist)	1 (0.2%)
Urgent treatment centre	Emergency / urgent care	1 (0.2%)

4.3   Newly Qualified

In all data presented in this chapter, newly qualified prescribers (defined here as having gained their prescribing qualification less than 1 year ago) have been included in all tables and graphs in columns labelled "No. Respondents". Where possible the data from the newly qualified respondents was also identified in separate tables. Although this study presents descriptive, rather than inferential, statistics the data from the newly qualified prescribers was considered in informing the development of Phase 2. Table 28 shows that n28 (6.9%) respondents in total were newly qualified prescribers.

Table 28: Qualified <1 year by profession

Profession	No. respondents
Dietitians	0
Midwives	1 (3.6%)
Nurses	13 (46.4%)
Paramedics	4 (14.3%)
Pharmacists	2 (7.1%)
Physiotherapists	3 (10.7%)
Podiatrists	2 (7.1%)
Radiographers - diagnostic	2 (7.1%)
Radiographers - therapeutic	1 (3.6%)
Total	**28**

In considering factors that have been identified as influential on the practice of prescribers, respondents were asked to rate their levels of confidence. Table 29 shows the rated levels of confidence in the first three months of qualifying as a prescriber and currently.

Table 29: Levels of confidence, all respondents

Answer Choices	Confidence in First 3 months No. respondents	Confidence now
Very confident	27 (6.6%)	201 (49.3%)
Confident	193 (47.3%)	172 (42.2)
Unconfident	147 (36%)	26 (6.4%)
Very unconfident	39 (9.6)	3 (0.7%)
Prefer not to say	1 (0.2%)	1 (0.2%)
Not answered	1 (0.2%)	5 (1.2%)
Total	**408**	**408**

The data for those qualified <1 year applies only to confidence within the first three months and is presented in Table 30.

Table 30 : Levels of confidence, prescribers qualified <1 year

Answer Choices	Confidence in First 3 months
Very confident	4 (14.3%)
Confident	9 (32.1%)
Unconfident	12 (42.9%)
Very unconfident	2 (7.1%)
Prefer not to say	1 (3.6%)
Not answered	0
Total	**28**

There were n242 (59.3%) respondents who stated they agree or strongly agree that a lack of confidence has prevented them from prescribing at some point. These data from this phase of the study do not identify when in their prescribing career the lack of confidence occurred.

Table 31 presents that n16 of the newly qualified respondents (3.9% of the whole sample) strongly agree or agree that lack of confidence has prevented them from prescribing.

Table 31: Lack of confidence preventing prescribing

Answer Choices	All respondents
Strongly agree	32 (7.8%)
Agree	210 (51.5%)
Disagree	124 (30.4%)
Strongly disagree	40 (9.8%)
Prefer not to say	1 (0.2%)
Not answered	1 (0.2%)
Total	**408**

Table 32: Lack of confidence preventing prescribing qualified <1 year

Answer Choices	Those qualified <1 year
Strongly agree	1 (3.6%)
Agree	15 (62.5%)
Disagree	9 (53.6%)
Strongly disagree	2 (7.1%)
Prefer not to say	1 (3.6%)
Not answered	0
Total	**28**

Table 33 shows how respondents rated the level of support they received as newly qualified prescribers. The level of support available to prescribers when first qualified is perceived to be sub-optimal by n124 (30.4%) of respondents. n3 (0.7%) preferred not to say and n1 (0.2%) skipped this question. n280 68.8% of the respondents said they had the support they felt they needed when they first qualified.

Table 33: Levels of support matched need when first qualified

Answer Choices	No. respondents
Yes	280 (68.6%)
No	124 (30.4%)
Prefer not to say	3 (0.7%)
Not answered	1 (0.2%)
Total	**408**

Out of those who attained their prescribing qualification less than a year ago, n8 (29%) of the n28 felt they did not have the level of support they needed and n2 (7%) preferred not to answer, shown in Table 34.

Table 34: Levels of support matched to need when first qualified, those qualified <1 year

Answer Choices	Those qualified <1 year
Yes	18 (64.3%)
No	8 (28.6%)
Prefer not to say	2 (7.1%)
Not answered	0
Total	**28**

4.4 Competency Framework

The *Competency Framework for all Prescribers* (RPS, 2021) is written to set out the skills and principles that set the standard for prescribing practitioners in the UK, applicable across all professions and clinical areas. It has been adopted as the standard of practice by all three regulatory bodies. The total in Table 35 far exceeds 408 as respondents were invited to select all answers that apply to them. There was a high level of engagement with this question from n405 (99.3%) and only n3 (0.7%) choosing not to answer. Table 38 demonstrates the range and variation of application of the *Competency Framework.* It is important to point out here, that the previous version of the *Competency Framework* was published by the Royal Pharmaceutical Society in 2016, and prior to that by the National Prescribing Centre in 2012, so there has been a standard available well before the current RPS (2021) publication. However, it was only in 2018 that it was mandated that HEIs should use the *Competency Framework* in prescribing education.

Table 35: Use of Competency Framework

Statement	Responses
I am not familiar with the Framework	31 (7.6%)
I feel it is not relevant to my practice	9 (2.2%)
I used the Framework during my prescribing course	226 (55.4%)
I use the Framework to support student prescribers in clinical practice	81 (19.9%)
I use the Framework to support my own prescribing practice	202 (49.5%)
I use the Framework in my annual appraisals	97 (23.8%)
The organisation I work for expects me to use the Framework, but gives no guidance / ideas on how to do that	38 (9.3%)
The organisation I work for expects me to use the Framework, and does give guidance / ideas on how to do that	46 (11.3%)
The organisation I work for has made no stipulation about using the Framework	99 (24.3%)
Prefer not to say	3 (0.7%)
Other	8 (2%)

Table 36: Use of Competency Framework "other" explanation

"Other" explanation	No.
Follow local guidelines which indirectly use the Framework	1
Used for academic work and training	1
Have not started prescribing	1
I did use it in my practice with the lead pharmacist who was auditing my practice	1
I work in education and am programme lead	1
My organisation has its own framework which guides our post-registration portfolio and annual appraisals	1
Not prescribing	1
Retired	1
Total	**8**

4.5   Never prescribed

Interestingly, as shown in Table 37 *n*18 (4.4%) people have identified reasons for never having prescribed, where only *n*11 (2.7%) identified themselves as having never prescribed when asked how long between qualifying and prescribing. *n*3 (0.7%) of those

who have never prescribed are newly qualified and were waiting for annotation on the register at the time of answering the survey.

Table 37: Never prescribed - reasons

Answer Choices	Responses *n*19
Not yet annotated on the register	3 (15.7%)
No longer clinical	0
Changed clinical area	3 (15.7%)
Lacks confidence	1 (5.2%)
Lacks managerial support	5 (26.3%)
Other	7 (36.8%)

Table 38: Never prescribed - "other" explanation

"Other" explanation	No.
Have not completed Trust forms yet	1
I feel I should be paid more to prescribe as I now have an additional qualification.	1
It's hard to say whether I have prescribed or not. I haven't signed the script yet because we operate near-exclusively via EPS. I make prescribing decisions daily, but as I am yet to be set up as a prescriber on SystmOne, technically my scripts have this far been technically signed off by a GP	1
Lack of funding	1
Lack of support and confidence in the clinician since moving job	1
No opportunity yet	1
Not needed in role	1
Total	**7**

4.6 Break from prescribing

Respondents who have prescribed but taken a break from prescribing practice — in this study defined as a minimum of three months or more — are shown in Table 40 with the explanation for their break in practice. The *n*7 respondents who selected "other" expanded their answer in the free-text space to explain why they have taken a break from their prescribing practice, which is presented in Table 40.

Table 39: Break from prescribing - reasons

Answer Choices	Responses *n*64
Change of job to non-clinical role	20 (31.3%)
Changed clinical area of practice	11 (17.2%)
Maternity leave	2 (3.1%)
Prolonged sick leave	5 (7.8%)
Lack of confidence	0
Lack of support	4 (6.3%)
Other	12 (18.8%)

Table 40: Never prescribed - "other" explanations

"Other" explanation	No.
Change of practice. Now out of hours. Less need on shift for prescribing	1
During Covid redeployment: outside usual area of practice. Was not expected to and did not feel comfortable prescribing. On gaining new employment after redeployment to a new Trust [and] was required to apply within the Trust to be able to prescribe independently.	1
Employer removed prescribing from role of health visitor	1
For a while I worked at a trust that required supervision of first 200 prescriptions Before being allowed to prescribe independently. I declined to prescribe for this Trust	1
My current post has a much smaller percentage of clinical time. Increased at times during COVID clinical cover, but not a lot of clinical at present.	1
Redeployment due to Covid 19	2
The company I work for would not have the clinical governance/ safe operating policies in place to allow a prescriber to practice safely in place.	1
Retired	4
Total	**12**

Table 41 presents the timeframes that respondents took a break from prescribing. This question was answered as applicable by *n*50 (12.3%) with *n*275 (67.4%) confirming this question was not applicable to them and *n*83 (20.3%) skipped this question.

Table 41: Break from prescribing - approximate time not prescribing

Length of time away from prescribing	Respondents *n50*
3 – 5 months	13 (26%)
6 – 9 months	3 (6%)
10 months – 1 year	10 (20%)
2 years	9 (18%)
3 years	5 (10%)
4 years	2 (4%)
5 years	5 (10%)
More than 5 years	1 (2%)
I don't know	1 (2%)
Prefer not to say	1 (2%)

In asking if those who had taken a break had returned to prescribing, *n*52 (12.7%) answered and indicated whether they had returned to prescribing or not, and if they intended to return (see Table 42).

Table 42: Return to prescribing

Answer Choices	Respondents *n*52
Yes	18 (34.6%)
No and I do not intend to	11 (21.2%)
No but I intend to	15 (28.6%)
Undecided	8 (15.4%)

The questions funneled further and asked about the type of support offered to respondents who did return to their prescribing practice, presented in Table 43.

Table 43: Support offered on return to prescribing

Answer Choices	Responses *n*27
None	13 (48.1%)
Short course	0 (0%)
Supervision	4 (14.8%)
CPD	3 (11.1%)
Supplementary prescribing	0 (0%)
Personal formulary	1 (3.7%)
Other	6 (22.2%)

Table 44 shows the answers given to "other" support offered on return to prescribing.

It appears not all the respondents who answered "other" have returned to prescribing,

but their answers give an insight into their situation.

Table 44: Support offered on return to prescribing - "other" explanation

"Other" explanation	No.
Have recently undertaken v300 and waiting for registration to NMC which is more relevant to my role	1
I left to do a non-clinical role but was involved with the teaching of the drugs so it was a fairly straightforward transition to prescribing clinically	1
I would love to use my prescribing qualification in my present post – it's a wasted resource, instead we have GPs prescribing for minor ailments - waste of resources and not very timely access to medication	1
Non-medical prescribing update.	1
None was offered, I undertook my own CPD.	1
Retired.	1
Total	**6**

4.7 Number of Years' experience prior to qualifying as prescriber

The number of years of experience as a qualified practitioner was calculated by

subtracting the year of qualifying in their profession from the year qualifying as a

prescriber. The *n*30 (7.4%) that are anomalous entries are labelled as "unknown" in

Table 45. These were unknown because the respondents who had dual qualifications, such as the V100 and V150, or V150 and V300 prescribing qualifications; or did not give their foundation profession, only Advanced Clinical Practitioner, so it was not possible to know which one the year of qualification applied to. Table 46 gives the number of years between qualifying as a clinician and qualifying as a prescriber for those respondents who were newly qualified

Table 45: Years of clinical experience prior to prescribing qualification
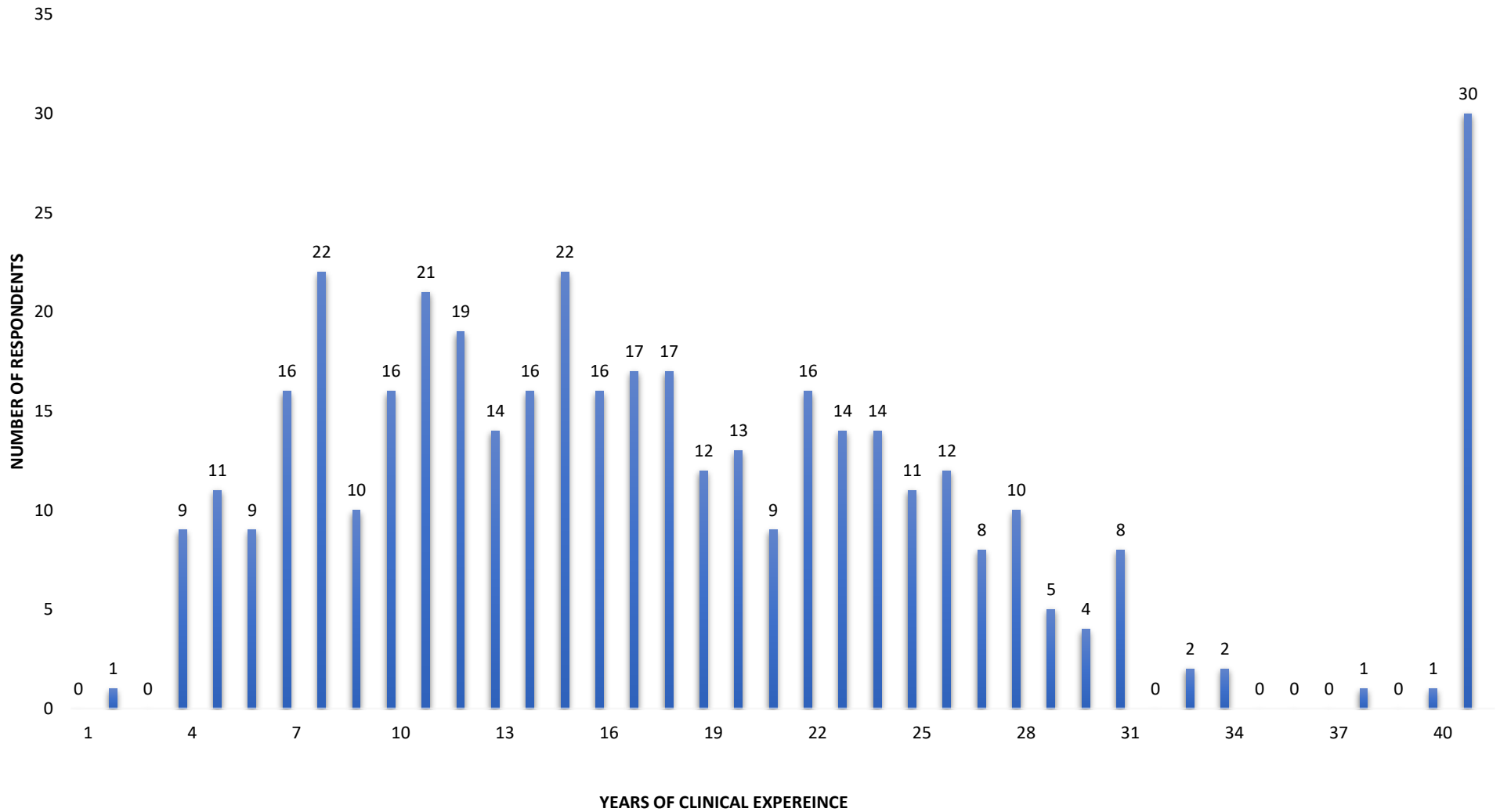
Table 46: Years of clinical experience prior to qualification those qualified <1 year
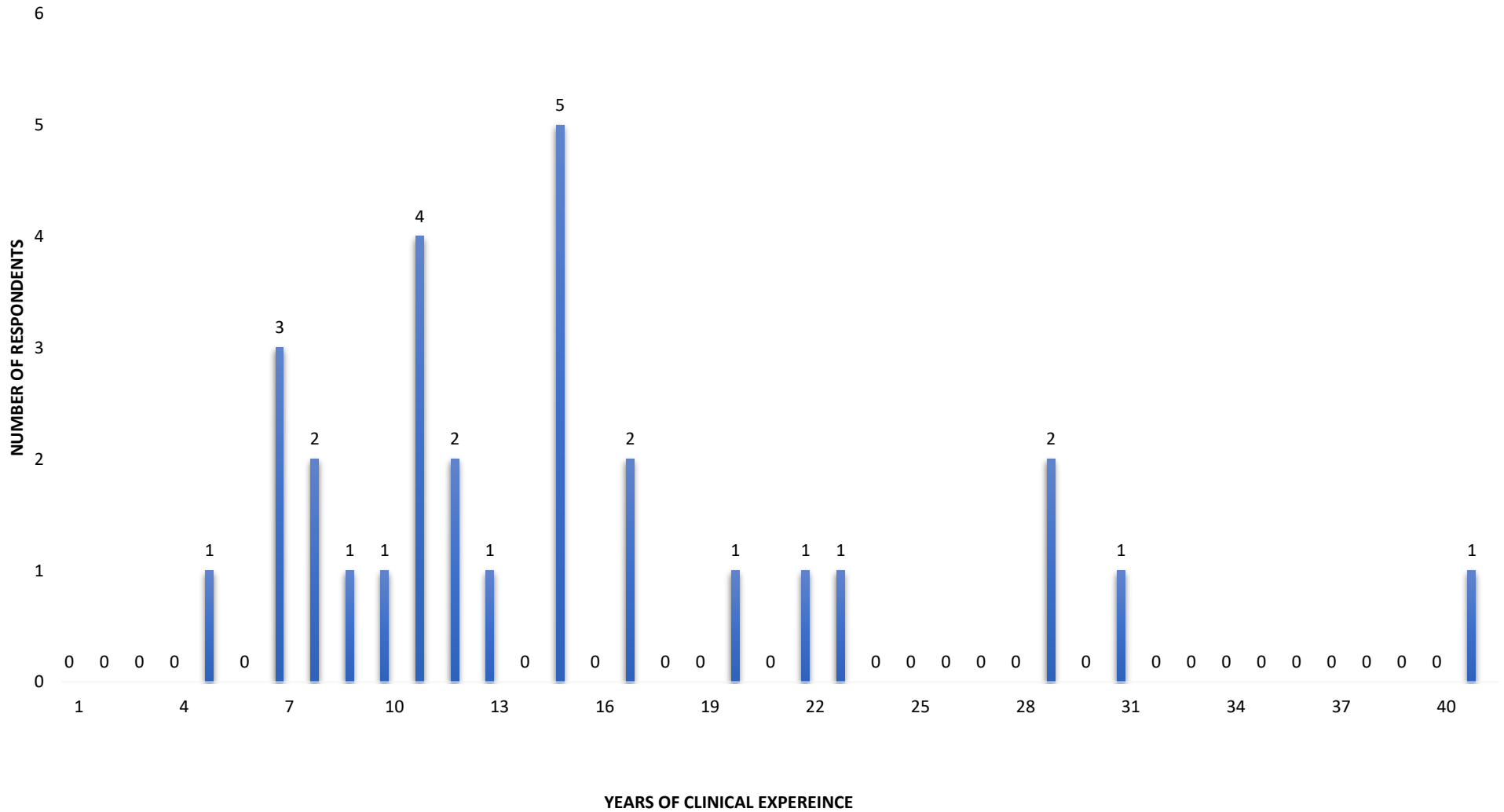
4.8 Influences on prescribing

Table 47 shows that 49.5% (*n*202) prescribers began their prescribing practice within two weeks of annotation on the register, and the percentages reduce significantly as the timeframe lengthens.

Table 47: Approximate time from annotation on register as a prescriber to prescribing

Time	No. respondents
2 weeks or less	202 (49.5%)
1 month	68 (16.7%)
2 months	33 (8.1%)
3 months	25 (6.1%)
4-6 months	27 (6.6%)
7-11 months	10 (2.5%)
12 months or more	18 (4.4%)
Never	11 (2.7%)
I don't know	14 (3.4%)
Total	**408**

Table 48 shows the same data specifically for those qualified less than 1 year.

Table 48: Approximate time from annotation on register as a prescriber to prescribing, qualified <1 year

Time	Respondents qualified <1 year *n*28
2 weeks or less	14 (50%)
1 month	2 (7.1%)
2 months	2 (7.1%)
3 months	2 (7.1%)
4-6 months	2 (7.1%)
7-11 months	0 (0%)
12 months or more	0 (0%)
Never	5 (17.9%)
I don't know	1 (3.6%)

Questions around possible influences on prescribers were continued. Respondents were asked about clinical supervision that included prescribing practice. Table 52 shows *n*206 (50.5%) did have clinical supervision that includes prescribing practice.

Table 49: Supervision that includes prescribing practice

Answer choices	Supervision now
Yes	206 (50.5%)
No	176 (43.1%)
Prefer not to say	5 (1.2%)
Not applicable	21 (5.1%)
Not answered	0 (0%)
Total	**408**

Table 50 presents the experienced effects of having supervision. Across the aspects of confidence, opportunities and professional relationships, *n*186 (45.6%) to *n*206 (50.5%) experienced supervision positively; *n*49 (12%) to *n*68 (16.7%) experienced supervision negatively. There were *n*148 (36.3%) to 151 (31%) who chose not to answer these questions.

Table 50: Experienced effect of supervision

Answer choices	Confidence	Opportunities	Professional Relationships
Positive	206 (50.5%)	202 (49.5%)	186 (45.6%)
No difference	49 (12%)	52 (12.7%)	68 (16.7%)
Negative	3 (0.7%)	2 (0.5%)	2 (0.5%)
Prefer not to say	2 (0.5%)	1 (0.2%)	1 (0.2%)
Not answered	148 (36.3%)	151 (37%)	151 (37%)
Total	**408**	**408**	**408**

Table 51 shows that 65% of respondents were aware that their workplace provided prescribing updates, 25.7% said there was no provision and 6.4% did not know if their

workplace had this in place. In terms of organisational influence, 32.8% of respondents felt there were processes that restricted their prescribing practice.

Table 51: Provision of workplace updates

Answer choices	No. respondents
Yes	265 (65%)
No	105 (25.7%)
I don't know	26 (6.4%)
N/A	12 (2.9%)
Total	**408**

32% of respondents felt that their organisations had policies in place that restricted their prescribing practice, as shown in Table 52. Most felt this was not the case for them, or that they were unsure and unable to answer that question confidently.

Table 52: Workplace Restrictions

Restrictions	No. respondents
Yes	134 (32.8%)
No	244 (59.8%)
I don't know	26 (6.4%)
Prefer not to say	1 (0.2%)
Not answered	3 (0.7%)
Total	**408**

Of those respondents who practise as supplementary prescribers, more respondents than not expressed the opinion that they do not have the appropriate support to facilitate their supplementary prescribing – n38 (9.3%) felt unsupported vs n9 (2.2%) who do feel supported. See Table 53.

Table 53: Appropriate support for supplementary prescribing

Support in Place	No. respondents
N/A	329 (80.6%)
Yes	9 (2.2%)
No	38 (9.3%)
I don't know	1 (0.2%)
Not answered	31 (7.6%)
Total	**408**

4.9   Errors

Respondents were asked about their experience following a prescribing error (if they had made one/any) and how that post-experience error affected them and their prescribing practice. Table 54 shows whether respondents have made a prescribing error or not. Table 55 presents the data on post-error experience support.

Table 54: Prescribing errors since qualifying

Answer choices	No. respondents
None	196 (48%)
1	59 (14.5%)
2-4	95 (23.3%)
5 or more	18 (4.4%)
Prefer not to say	1 (0.2%)
I don't know	31 (7.6%)
Not answered	8 (2%)
Total	**408**

Table 55: Prescribing errors - post-error experience

Answer choices	Post-error support	Processes changed	Lost confidence	Regained confidence	Anxious about prescribing
Strongly agree	60 (14.7%)	24 (5.9%)	12 (3%)	42 (10.3%)	5 (1.2%)
Agree	106 (26%)	50 (12.3%)	57 (14%)	68 (16.7%)	15 (3.7%)
Disagree	13 (3.2%)	65 (15.9%)	89 (21.8%)	14 (3.4%)	99 (24.3%)
Strongly disagree	6 (1.5%)	17 (4.2%)	23 (5.6%)	3(0.7%)	48 (11.8%)
Prefer not to say	0 (0%)	1 (0.2%)	2 (0.5%)	1 (0.2%)	4 (1%)
N/A	60 (14.7%)	85 (20.8%)	61 (15%)	114 (27.9%)	68 (16.7%)
Not answered	163 (40%)	166 (40.7%)	164 (40.2%)	166 (40.7%)	169 (41.2%)
Total	**408**	**408**	**408**	**408**	**408**

Table 56 shows whether newly qualified participants respondents have made a prescribing error or not.

Table 56: Prescribing errors since qualifying, those qualified <1 year

Answer choices	Respondents qualified <1 year *n28*
None	22 (78.6%)
1	2 (7.1%)
2-4	1 (3.6%)
5 or more	0 (0%)
Prefer not to say	0 (0%)
I don't know	3 (10.7%)

Continuous Professional Development (CPD) has been identified as valued in the literature by prescribing practitioners. This questionnaire asked about engagement, access, possible barriers and the respondents perceived effect of CPD. Table 60 shows the level of engagement with CPD by the respondents. Table 57 shows the frequency of CPD engagement.

Table 57: CPD engagement

Answer choices	CPD in last year
Yes	237 (58.1%)
No	162 (39.7%)
N/A	9 (2.2%)
Total	**408**

Table 58: CPD Frequency

Answer choices	No. respondents
Monthly	24 (5.9%)
Quarterly	48 (11.8%)
6-monthly	26 (6.4%)
Annually	155 (38%)
Less often	115 (28.2)
Prefer not to say	3 (0.7%)
N/A	34 (8.3%)
Total	**408**

Table 59 shows that n354 (86.7%) agree or strongly agree that CPD supports their prescribing practice.

Table 59: CPD supports practice

Answer choices	No. respondents
Strongly agree	169 (41.4%)
Agree	185 (45.3%)
Disagree	34 (8.3%)
Strongly disagree	2 (0.5%)
Prefer not to say	9 (2.2%)
N/A	0 (0%)
Not answered	9 (2.2%)
Total	**408**

Table 60 shows that most of the respondents get leave to attend CPD events to some degree; however, Table 61 shows that only 52.2% get no financial support towards CPD events.

Table 60: Leave given for CPD

Answer choices	No. respondents
Never	52 (12.7%)
Sometimes	234 (57,4%)
Every time	103 (25.2%)
Prefer not to say	2 (0.5%)
N/A	15 (3.7%)
Not answered	2 (0.5%)
Total	**408**

Table 61: Funding given for CPD

Answer choices	No. respondents
None	213 (52.2%)
Partial	78 (19.1%)
In full	102 (25%)
Prefer not to say	11 (2.7%)
Not answered	4 (1%)
Total	**408**

4.10 Further experience

Looking at a different aspect of CPD, respondents were asked if they are a CPD

provider (see Table 62). Table 63 presents the types or formats of CPD they are

involved in providing. Table 64 gives additional information comments about how they

provide CPD.

Table 62: Respondents Provide CPD

Answer choices	No. respondents
Yes	213 (52.2%)
No	78 (19.1%)
Prefer not to say	11 (2.7%)
Not answered	4 (1%)
Total	**408**

Table 63: Types of CPD provision

Answer choices	No. respondents
Lecture	70 (17.2%)
Workshop	58 (14.2%)
Organised event	38 (9.3%)
Other	17 (4.2%)
N/A	209 (51.2%)
Not answered	16 (3.9%)
Total	**408**

Table 64: Types of CPD provision - "other" explanation

"Other" explanation	No.
1-2-1	2
As part of MSc	1
Cascade training to my team	1
Case reflection with colleagues	2
Clinical supervision	5
Infographics	1
NMP forum - presentation of role, self-audit and reflection	3
Online learning	1
Weekly CPD presentations	1
Total	**17**

Since 2018, since a change in regulatory body validation of prescribing education, prescribing clinicians other than doctors have been able to act as the clinical mentor, the designated prescribing practitioner (DPP) for student prescribers. The questionnaire asked respondents if they have engaged with this role (shown in Table 65).

Table 65: Prescribing mentorship role

Answer choices	No. respondents
No, I haven't, but I feel ready	142 (34.8%)
No, I haven't, but I do not feel ready	95 (23.3%)
Yes, I have, and I feel ready	123 (30.2%)
Yes, I have, but I do not I feel ready	12 (3%)
Yes, I have, and I feel ready but it is not practical for me to do so	30 (7.4%)
Prefer not to say	2 (0.5%)
Not answered	4 (1%)
Total	**408**

4.11 Key Findings

This questionnaire produced data that described aspects of prescribing practice in the UK. The key findings are as follows:

1) There was a mismatch between the declared qualification and the declared prescribing practice and the profession.

2) When newly qualified prescribers, n186 (45.6%) lacked confidence and n124 (30.4%) found the support available to them did not match their need.

3) There were n40 9.8% respondents who were unaware of the Competency Framework, or felt it was irrelevant to their practice; n226 (55.5%) who said they used it in prescribing course and n99 (24.3%) who had no organisational requirements.

4) There were n19 (4.7%) who have never prescribed; a variety of reasons were given.

5) The effect of supervision for prescribing clinicians was a strongly, although not exclusively, positive experience with up to 50.5% reporting a positive effect, n3 0.7% negative, up to 16.7% neutral.

6) Continuous Professional Development was highly valued, with n237 (58.1%) able to access CPD during last year. Overall, n354 (86.7%) found CPD supports their prescribing practice.

7) Prescribing errors were declared, and n172 (42.2%) have made one or more errors since qualifying as prescribers. Of these, n166 received post-error support and n69 lost confidence. At the time of answering the questionnaire, n20 respondents remained anxious about prescribing.

These key results were used to develop the interview protocol for the semi-structured interviews in Phase 2 and as deductive codes when beginning the process of coding the completed interview transcripts.

4.12 Phase Two

The survey process was designed to deliver descriptive statistics that would inform how Phase 2 of the research would take shape. The key findings detailed above were used to develop the interview protocol, with the purpose of explaining further the results in Phase 1. There were n183 respondents who said they were willing to be contacted regarding an interview for Phase 2 of the research. Eight of these were removed because n3 nurses, n3 podiatrists and n2 pharmacists were known to the researcher which is an explicit non-eligibility criterion. See table 66.

Table 66: Number of respondents willing to be interviewed

Profession	Responses	Removed	Remaining	Of whom newly qualified	Of whom never prescribed
Dietitians	2	0	2	0	1
Midwives	2	0	2	1	0
Nurses	144	3	140	5	3
Paramedics	7	0	7	2	1
Pharmacists	13	2	11	1	1
Physiotherapists	5	0	5	0	0
Podiatrists	6	3	3	1	1
Radiographers – diagnostic	1	0	1	1	1
Radiographers – therapeutic	1	0	1	1	0
Other – ACP	2	0	2	0	0
TOTAL	**183**	**8**	**175**	**12**	**8**

4.13 Summary

This chapter has presented the results from the Phase 1 descriptive statistical data analysis. This gives a description of the scope of clinical practice, prescribing activity and some of the resources available to prescribing clinicians. Key findings have been identified, which was the starting point of developing the Phase 2 research tool.

Chapter Five

PHASE TWO RESULTS

5.1 Introduction

Chapter 3, Methodology, presented the process of how Phase 1 was conducted and directly influenced the content and deductive codes of Phase 2. Further, it presented the process of how reflexive thematic analysis was applied in developing the codes and themes. The previous chapter (Chapter 4, Phase 1 Results) presented the descriptive quantitative data from Phase 1. This chapter presents the results from Phase 2: the developed themes and sub-themes from the semi-structured interviews.

5.2 Participant Demographics

A total of $n11$ responded and agreed to be interviewed. At the time of interview, $n3$ had never prescribed and $n2$ had been qualified prescribers for fewer than 12 months. Another $n2$ participants had been qualified prescribers for just over 12 months. While all $n13$ held the V300 qualification, $n3$ have supplementary prescribing rights only due to the current legal restraints on their professions (dietitians and diagnostic radiographer). The demographic details of the participants are given in Table 67 and Table 68.

Table 67: Interview participants

Profession	Qualification	Never Prescribed	Newly Qualified
Dietitian	V300 supplementary	Yes	
Dietitian	V300 supplementary		
Paramedic	V300 independent		
Pharmacist	V300 independent	Yes	Yes
Physiotherapist	V300 independent		
Podiatrist	V300 independent		
Podiatrist	V300 independent		
Nurse	V300 independent		
Nurse	V300 independent		
Radiographer, therapeutic	V300 independent		
Radiographer, diagnostic	V300 supplementary	Yes	Yes

Table 68: Interview participants area of clinical practice*

Current Clinical area
Diabetes
Emergency Department
Head and Neck Cancer
Hospital & Community
Hospital@Night and Primary Care
Mental Health
Musculoskeletal
Pain Service
Primary Care
Primary Care
Rheumatology

*The order listed in this Table does not correlate with order listed in Table 67

Table 69 shows the year in which each participant gained their prescribing qualification. The most recent was in 2022 (the year in which the interviews took place) and the earliest was 2008, so this individual had been a prescriber for 14 years.

Table 69: Year participants gained prescribing qualification
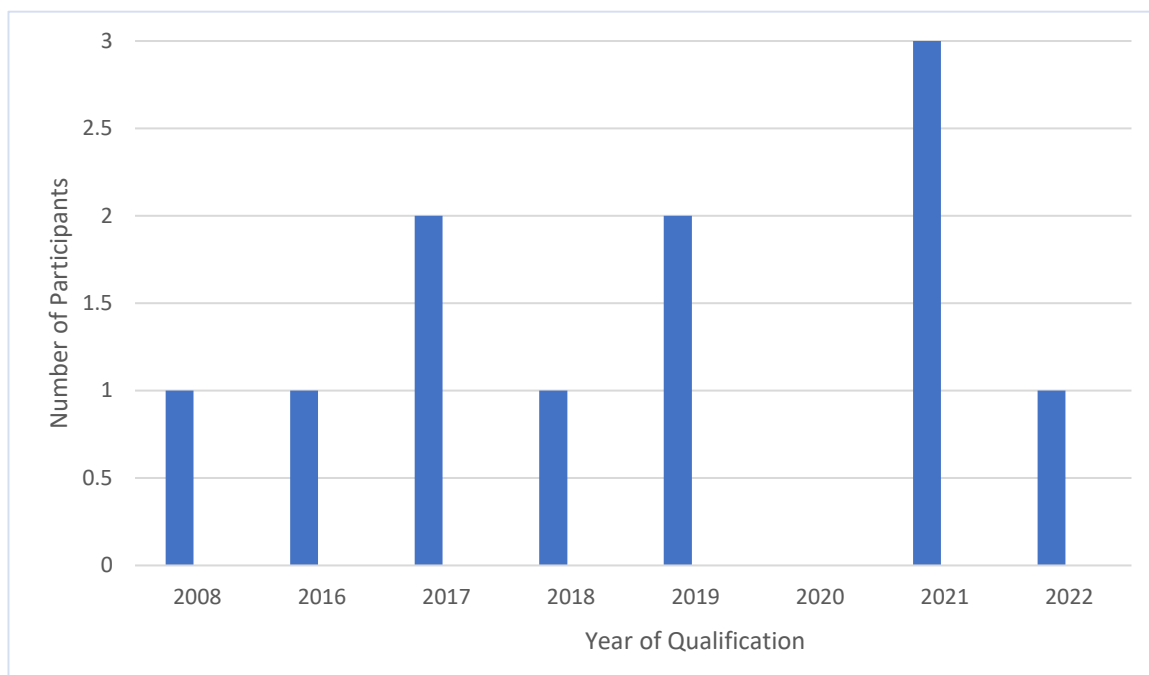
The following themes have been generated by the researcher through the process of reflexive thematic analysis discussed in Chapter 3, section 3.19. There are four themes, each with sub-themes, which are given in table 70.

Table 70: Phase 2 Results Themes and Sub-Themes

Theme	Sub-Theme
Becoming a Prescriber	Motivation Advanced Clinical Practice Role Expectations
Diverse Nature of Prescribing Role	Supplementary Prescribing Variation in Prescribing Role Never Prescribed Newly Qualified
Supporting Prescribers in Practice	Colleagues Supervision and Supervising Others Evidencing Fitness to Practice
Social and Cultural Behaviour in Prescribing	Awareness of Risks Errors Competency Framework Organisational Factors

Each theme is introduced and direct quotes from participants are used to demonstrate the results. Participants, when quoted, are identified by profession, followed by a number to differentiate between participants of the same profession. The two radiographers are differentiated form each other by their diagnostic and therapeutic radiographer status. In the quotes given, any words added in square brackets are from the researcher for clarification.

5.3   Theme 1 – Becoming a Prescriber

This theme showed the clinicians' progression from choosing to undertake the prescribing course and experiencing the reality of being a qualified prescriber. This is explored through the sub-themes of their motivation for undertaking the prescribing course in the first instance, the connection of the prescribing qualification to the advanced clinical practice role, their perspectives of becoming qualified prescribers and how prepared they feel to undertake this role. The sub-themes demonstrate key aspects of the trajectory from deciding to undertake the prescribing role to experiencing the reality of what the role actually entails.

5.3.1 Motivation

This sub-theme presents what participants identified as their expectation, reasons for and feelings about undertaking the prescribing course. A variety of reasons were given, and these are represented in the quotes given below. Two participants, who are quoted below, expressed a strong sense of self-motivation to progress their careers, both regarding the prescribing course as an opportunity:

"It was an opportunity to do something different. And I wanted to upskill. This was the only opportunity available to me to upskill in my profession." **Pharm.1**

"I was excited to learn a new skill. [I was asked] *do you want to go on the course? Are you interested? I just felt it would be silly to say not to that opportunity."* **Diet.2**

The following three quotes are from participants who were motivated by identified clinical need in their area of practice, a poorly fulfilled patient service or the need to future-proof the service:

"I'm interested in things that I think are going to make me a better clinician. That's my motivation, really." **Pod.1**

"I was on the community for quite a few years. The frustration at the weekends of trying to get hold of an out of hours to get a prescription. The patients weren't getting the care they deserved. We found we were getting an increase of admissions because they weren't getting their medications on time. And I thought, there's got to be a better way." **Nurse.1**

"So, I saw my colleagues going through it and knowing it was a very difficult course and knowing it's a very stressful course. I didn't quite put me off. My colleagues were probably moving onto pastures new. There was that kind of forward planning and job succession." **Rad.1.Ther**

A factor that motivated some participants was the requirement to undertake the prescribing course as a condition of being appointed to a post. Two participants said they had no choice in undertaking prescribing education, it was the directive of the employing Trust.

"The reason I applied for the trainee ACP [Advanced Clinical Practitioner] *post was because I've been a paramedic for years... I wanted to learn more, and I wasn't going to do that in the ambulance service. As part of that, as a training ACP, I had to do my prescribing as part of the MSc."* **Para.1**

"Yes, I guess it wasn't a choice as I had to do it as part of the course." **Physio.1**

The next participant was also clear that undertaking the prescribing course was obligatory, but they were also explicit that, while the obligation affected the timing, they were also personally motivated and excited to have the opportunity:

"The Trust decided they wanted us to do non-medical prescribing. It was part of our ACP pathway. As soon as I could climb up the ladder, still keeping clinical, I jumped at the chance." **Nurse.2**

The next quotes show, that with the obligation to be a prescriber for their job roles, there was awareness of the clinical necessity and some concern about assuming the responsibility:

"I would have liked to have done it, but we were told we had to do it, so we all did it. And if you didn't want to do it, then you really couldn't work in our job anymore. I was the last one on that list, through personal choice. I was quite scared of doing it." **Pod.2**

"So, when I got this job, the role of ACP, it was a requirement to be a prescriber. That's a really exciting thing to do. So, basically, job role and to further my career and support the team." **Rad.2.Diag**

A summary of the motivating factors given in this section were: a personal desire to improve their own skills and knowledge, recognising that there was the scope for service improvement for their patients, that their job role had the prescribing qualification as a requirement so undertaking the course was compulsory, or prescribing was a compulsory part of their advanced clinical practice degree.

5.3.2 Advanced Clinical Practice Role

Eight of the participants were working in Advanced Practice Role. For an increasing number of prescribers, the prescribing V300 is part of their Advanced Clinical Practice master's degree pathway as a compulsory module. There was a mixed response to undertaking the ACP, and with it the prescribing role. One participant regretted the pathway because, although this individual made a personal choice to undertake the role to progress her scope of practice, the effect of the pandemic and short staffing left her feeling very unsupported throughout her course, resulting in feeling not ready for the role and has had a profound impact on the way she feels working in her role. This was the same participant who undertook prescribing because it was a compulsory part of the ACP degree:

"I think becoming an ACP is probably one of the worst decisions I ever made. But now I feel stuck… At the moment I don't see how I can be made to feel better… It's too late now, to be honest, I just need to keep going." **Para.1**

Another participant spoke of how it was the best choice he has made for his career and is very much enjoying the challenges the role brings in expanding his skill and scope of practice.

"And this opportunity came up, which really suits me as a person, but also the breadth of clinical exposure with everything, really. I think it exceeds my expectations. Yeah, my wife says I'm happier than I've ever been at work." **Physio.1**

Others spoke of the ACP and prescribing roles as a reflection of the changes in their professions and how they perceive ACP and prescribing as professionally beneficial:

"I think it's good for nurse education and when, you know, when the students come out, they see it's not just putting a bandage on, or doing a drug round, or bed bathing people, which is important, but there's possibilities never there years ago." **Nurse.1**

"The role has just become so much more complex. I've taken on a lot more ward work […] We have supervision from the consultants." **Pod.2**

One participant, a diagnostic radiographer who has studied for and is working in an advanced practice role, spoke of her frustration that her professional body supports her profession in advanced clinical practice, but not in lobbying to have the law changed to permit independent prescribing:

"It was the Royal College of Radiologists that turned around and said that diagnostic radiographers work within the field of radiography where prescribing is not required of a diagnostic radiographer. And that's their statement. You know radiographers work in a diagnostic, not an interventional field. I said well, under the

pillars of advanced practice we have expanded beyond the bounds of traditional diagnostic radiography practice[…] And FYI, I haven't taken an X-ray in quite a long time therefore, you know I'm very much in this [advanced] *role now."* **Rad.2.Diag**

5.3.3 Expectations of and Feeling Prepared for Prescribing Role

The experience of being a qualified prescriber was discussed by those participants who expressed that they felt their prescribing education had not prepared them to fulfil the role and they did not necessarily feel ready to take on the level of responsibility that comes with prescribing.

"I'm not convinced just yet, as to the churning out independent prescribing pharmacists is utilising our skills as best as they could be… But in terms of prescribing itself, you know, putting my signature on a piece of paper or digitally, there just wasn't the need." **Pharm.1**

For one, expectations of what the qualification would allow them to do, or their understanding of the level of responsibility, was difficult to adjust to:

"[When I qualified] *w*e *were just left to get on with it […] Because for me prescribing is a big part of it and it's a big responsibility which, maybe, I just wasn't quite prepared for."* **Para.1**

Although participants were not questioned about their prescribing courses, one did talk about how their course changed their expectations and how they viewed what it meant to them to be a prescriber:

"I don't think any of us really understood what we were going to do, we were just, 'Oh, we could prescribe, that'd be great,' and it wasn't until we all did the course that we thought, 'Oh, actually, this is going to be quite cumbersome. It's not actually going to be that useful.' I don't think any of us, because we were the first lot [of dietitians] to go through, really, fully understood what it was and the restrictions of supplementary prescribing. I think doing the course made me more nervous about it than prior to the course, because then I knew more about it." **Diet.2**

This theme has outlined mixed experiences of the participants becoming prescribers, beginning with reasons they undertook the prescribing course in the first instance, showing both intrinsic and extrinsic motivating factors. Development into the advanced clinical practice role brought prescribing to some as a compulsory factor and, with the increased uptake of the ACP role, prescribing is an expected skill with advanced practice, yet this has been shown to lack full support for some.

5.4 Theme 2 – Diverse Nature of Prescribing Role

The diversity of the prescribing role is evident in the differing boundaries of the legally defined roles (independent, supplementary and community) and the different restrictions – or freedoms – that are attached to the different professions. Participants spoke about how these restrictions have affected their prescribing practice. Further, they discussed their reasons for never having prescribed, as well as their experiences of being a newly qualified prescriber and the effect on them.

5.4.1 Supplementary Prescribing

The use of supplementary prescribing was discussed in terms of the restrictions and extra work it creates. The value of this prescribing role was challenged by participants,

they expressed their views that a change in the law is needed and that supplementary prescribing is redundant. Additionally, frustration was expressed by these participants that they had undergone the course and the same assessments alongside those who qualified as independent prescribers but were subject to restrictions and additional workload to write a prescription once qualified. See Table 67 that shows that n3 participants were supplementary prescribers only.

This participant discusses the level of responsibility held with the prescribing role, and the additional level of work involved in the execution of the supplementary prescribing role. Additionally, there is explicit frustration about the fact supplementary prescribers undergo identical education and assessment as independent prescribers:

"And I… in all honesty, it's a paper exercise. I don't see how it benefits anyone, because … as a qualified professional, you have got responsibility of working within your own scope of practice anyway, irrespective of prescribing. So, why does the need to have this additional piece of paper? And who's interested in it? And from the professional perspective, when you look around at other healthcare professionals, you know, you can have much less experienced nurses that can prescribe without the additional paper exercise… It should be helping practice rather than creating more of an administrative burden for both dietitian and the doctor. And it's frustrating because I've completed the same qualification as the nurses. It's actually quite insulting as a professional group that we don't have the same prescribing rights at the end of that qualification." **Diet.1**

The variation in prescribing practice due to supplementary prescribing is noticeable across different professional groups, where some have their prescribing described only by their clinical scope of practice while others – because of their profession – are heavily

restricted in their prescribing practice. Echoing Diet.1 above, some participants expressed their annoyance that they undergo the same course and assessments as those who have full prescribing freedom, but remain very restricted in what and how they can prescribe:

"I've qualified exactly the same as one of the clinical nurse specialists and, you know, I need to go jump through a few more hoops before I can prescribe the same thing… It was exciting because not many radiographers, not many diagnostic radiographers do it. Can kind of see why now… It's just demoralising." **Rad.1.Ther**

"Why is the RCR saying that we can't that we don't need it [independent prescribing] *as part of our job role? So that's what I find that the comedy part of it is saying, you know, why did you let us come and be ACPs in the first place then? It's* [supplementary prescribing] *adding another step to the process to an already over-stretched team… that's caused a lot of frustration for the team and for me… I can't see the need for supplementary prescribing, because what's the point? I'm going onto a doctorate here, people, I've done the DEXA reporting. What more do I need to do? Or am I always going to be held back by my professional title?"* **Rad.2.Diag**

"So, it's just the legal, logistical barriers; I'm yet to come a credible argument why not [independent prescribing].*"* **Diet.2**

Networking with other supplementary prescribers for peer support was not successful for one participant:

"They said there was another supplementary prescriber working on ITU. I tried to track her down, but I don't think she does much prescribing either. I went to her for advice as to how she writes her supplementary prescriptions. She said 'You're better talking to

the Hospital@Night team' who said, 'We don't do supplementary prescribing.' So, I don't know if there's crossed wires there." **Rad.2.Diag**

Additionally, the same participant expressed that colleagues were unclear about how a clinical management plan could work:

"My Trust itself was a bit confused as to how many drugs you could have on a clinical management plan." **Rad.2.Diag**

One participant felt there could be a use for supplementary prescribing, but that all prescribers should have both independent and supplementary status.

"I think it's time we got independent status, we should be able to do both… There will be some people who are more confident and capable and want to be independent prescribers. There will be others that don't want to or don't feel quite ready to do that. I think there is a bit of a block of understanding of the dietitian's role. Yeah, it's about food nutrition but it isn't about telling people what to eat and what not to eat." **Diet.2**

5.4.2 Variation According to Profession

The perceptions of the participants of how their prescribing contributes to their teamwork vary according to profession. This sub-theme captures those who have questioned the usefulness of them being prescribers at all, as well as those who state they could not function effectively without the qualification. The key difference between these perspectives are the profession of those participants. The nurses stated how valuable being a prescriber is to their clinical practice:

"I can't imagine my job without being a prescriber. I couldn't do it. I think being a prescriber opens a lot of doors… I don't think we encourage people enough to do it, and I think there's a lot of fear around it which prevents people from doing it." **Nurse.1**

"It's not to be taken lightly at all, but it's a really important part of my role... I don't feel that I could do my job without it." **Nurse.2**

The allied health prescribers have mixed views about how useful prescribing is for their own practice. One felt that nurses have greater scope for using prescribing:

"Their [nurses] *scope of practice is going to be much bigger. My impression is that it's much more useful for them. To be perfectly honest, I'm not sure how necessary – apart from the steroid injections – prescribing was really for me, in this particular role… It wasn't long into the course I realised this probably wasn't going to be as relevant for me as it was for all the nurses."* **Pod.1**

"I think coming from a paramedic background, it's not something that you're used to. Like nurses are used to prescriptions, because they're used to giving it and things like that, whereas I'm like, I feel like I don't have quite as much background as other people… because everybody else just seems to know more than I do… One of my colleagues was talking to me yesterday and she said, 'I wish I wasn't doing this.' And she's amazing, and she has the same sort of feelings, I guess." **Para.1**

Another two talked about feeling the restrictions on their prescribing practice, due to being a physiotherapist and a paramedic, lessened their sense of being able to help their patients directly and contribute to the efficiency of their teams:

"I think just in terms of your independence and - not being an asset, because that's the wrong word, but like just how more efficient you can be and how much more you can contribute to the department [For example] *there's someone in horrendous pain in the waiting room, being able to prescribe them something."* **Physio.1**

"We had somebody seizing, and I can't deal with them because I can't prescribe what they need." **Para.1**

In contrast, two others spoke about the satisfaction they had in their prescribing role, despite restrictions or extra work involved compared to other prescribing professions in fulfilling their roles:

"They're quite difficult decisions that we have to make… our patients are very ill. I think it's been a really good experience, good for the patients and, in fact, patients bypass the doctors to come to us now, because they know they can phone us on the same day… and we'll get the medications." **Pod.2**

"But from since I've been able to prescribe, I've been able to finish that, kind of, episode of care and be able to action that prescription straight away. So, I think for the patients, they, I don't think they were, you know, bothered whether I'm a doctor or not, in a way." **Rad.2.Diag**

A dietitian spoke about the unique position that dietitians have as prescribers:

"I didn't feel apprehensive about that change of my role because I was confident that I know my professional practice. I know the decisions I'm making, It was more of an administrative 'I can do it all now.'" **Diet.1**

The prescribing of controlled drugs is an aspect of prescribing that law defines in detail; which professions can prescribe them, and if so, which specific drugs. There were comments by allied health professionals who are subject to very restricted or no prescribing of controlled drugs, and their view that they need to be able to prescribe them. One participant was aware that there is a possibility that a few controlled drugs could be approved for radiographers to prescribe, but that legal approval for this small list has been subject to delays:

"It just needs the government say-so, doesn't it, that radiographers can prescribe from a set of six controlled drugs, so I know it's a tick box exercise at the end of the day. And everything's just delayed, thanks to Brexit and Covid, and no government currently… Misuse of Drugs Committee has agreed it." **Rad.1.Ther**

"So, as a physiotherapist I'm only allowed to prescribe seven of the controlled drugs, but it could be worse. I could be a paramedic and not even prescribe any… It's just asking a colleague to prescribe it for me" **Physio.1**

Another participant experiences the same restrictions, despite clinical scope of practice, skill and experience, placing a significant limitation on both their prescribing and advanced practice role:

"I can't prescribe CD drugs which, when working in an emergency department is a little bit of a hindrance. I've done exactly the same qualification as a nurse has and, I don't know. We can give it [controlled drugs] *on the back of an ambulance. We can give it…, which, when working in the emergency department is a little bit of a hinderance. I still have to go to people and ask them to prescribe morphine, diazepam, codeine – so I'm really, if I have somebody who's in pain, the only thing I can prescribe them myself is*

paracetamol and ibuprofen, which for a 10/10 pain score isn't really very good... Somebody else has to come with me to do it." **Para.1**

This sub-theme has highlighted the fact that, especially allied health professions, have their prescribing role restricted in a way nurses do not. Some allied health professionals spoke about their thoughts on having the skill and education to make and carry out their own prescribing decisions, they are dependent on other prescribers due to legal restrictions. Others spoke of their satisfaction to be able to complete the prescribing process and nurses commented that prescribing is critical to their clinical role.

5.4.3 Never Prescribed

There were *n*3 participants who had never prescribed at the time of interview. One had been qualified for 9 months at the time of interview and was actively in the process of getting necessary organisational processes sorted out to enable prescribing. Participants were asked why they had never prescribed, and a variety of responses were given. Rad.2.Diag cited lack of a doctor to act as the independent prescriber on the clinical management plans, and Trust uncertainty in how to implement supplementary prescribing, as causes of delay.

"I was aware that I was passed, I was put on the HCPC register in November last year and I have not written a single prescription yet. Firstly, my Trust had very limited experience of supplementary prescribers. No one was really sure the best way of going about writing a clinical management plan, for example. We also lost our consultant in the September and our department was left without an overseeing consultant until February this year. So, there was nobody to act as an independent prescriber to co-sign the clinical management plans." **Rad.2.Diag**

Another had been qualified for 5 years and was willing, but nothing was yet in place for that to happen and cited an incorrect job description and lack of a doctor support for the supplementary prescribing role:

"It's been a series of problems. I did it in 2017, so I've had it for quite a while and unfortunately not used it. When I got the qualification there was a bit of a wrangle about getting it put onto the job descriptions to… and the manager who was doing that was very supportive about us getting the prescribing, then retired. But she hadn't actually managed to get that job descriptions changed. I still had my old job description… and then I moved job to a mental health trust and that the prescribing again isn't on my job description… And I just didn't feel comfortable about having that person as being my countersignature because they should know more than me rather than the other way round." **Diet.2**

The third had been qualified for 11 months and was willing to prescribe but felt her current employment / area of practice was not conducive to support her in a prescribing role:

"Well, why didn't I prescribe [yet]*? One, I think my confidence has probably, you know, it wasn't as it was when I first came away from the course. Number two – and I think this is the biggest factor – I didn't feel like there was a* need *for me to prescribe. And I'll be very honest, it's more of a risk involved for me personally, and do I feel like I'm being paid enough to accept that risk?"* **Pharm.1**

There were also comments from four participants who have colleagues who have qualified but never prescribed:

"So, we don't really have a lot of medical support. So, in terms of, I would say making us feel a bit more confident about actually wanting to prescribe. So, a colleague of mine that has also had her prescribing qualification she's never prescribed a thing. Ever. So, I think partly for that reason really is just feeling that you're a bit on your own with it." **Pod.1**

"And again, I think there's certainly people within my department who are choosing not to undertake prescribing qualifications because of the logistics of managing a clinical management plan or they've not got a medical consultant who's willing to do that administrative work to support them. Or their caseloads are too complex, that it's too bitty to be able to logistically organise it." **Diet.1**

"And even speaking to my colleague, one who has been an independent prescriber for a very long time, she says she also never feels the need to prescribe... Four of my good friends, right, I can ask them honestly and they haven't [prescribed] *and the number one thing they will say is it's because of the pay."* **Pharm.1**

"Then I have a colleague who's just completed prescribing a year ago and refuses point blank to prescribe. Will not prescribe. She's too afraid. To do your ACP, your three-year masters, prescribing is a compulsory part of that. And that's why some people do it [prescribing qualification]*, but they won't use it."* **Nurse.1**

This sub-theme has presented various reasons why some practitioners have not used their prescribing qualification at all. Some are moving toward actively prescribing, others need changes, either in their relationship with colleagues or their clinical scope of practice, in place before they feel they can prescribe.

5.4.4 Newly Qualified

This sub-theme presents the participants experiences of being newly qualified. Experiences of how prepared they felt to step into the prescribing role also came up. Two were newly qualified at the time of interview, and others thought back to the time when they were newly qualified and how that experience affected them. The ones that had not prescribed to date considered what they would value having in place when, or if, they do make that transition, highlights the variation in practice for newly qualified prescribers. One participant was able to immediately and or confidently use their qualification.

"It was interesting from the perspective that my decisions were no different [from pre-prescribing course]. *It just… I was now at a point where I could actually do the signature myself, because what I've been doing for years and years and years, was making the prescribing decision, but then delegating that signature to someone else."* **Diet.1**

The next quotes from the following participants expressed the sense of responsibility, even trepidation, they felt as a newly qualified prescriber:

"I think that's the difference; before you're a prescriber, you run up to a doctor and say, can you do this? Can you just do this? And actually, a lot of the registrars and the consultants are very happy to take your trust on it. But as a newly qualified prescriber, that takes on a whole different meaning… My first prescription was paracetamol. Just to keep it simple to make sure I do that right… but I felt for me personally I was quite comfortable in that transition." **Rad.1.Ther**

"I don't have a scientific O Level to my name, so it was horrendous, but I learned so much and, yet, to start with, once I got my qualification, it was quite daunting actually. After having told everyone for a long while, 'Just do this, just give this,' you know? My first prescription took me 20 minutes and that was paracetamol because I was checking renal function, liver function, what else are they on? How much do they weigh? I think the enormity of it dawns on you." **Nurse.2**

"It's quite scary at first. The thought that, you know, you're going to be prescribing." **Nurse.1**

Another participant who was yet to begin prescribing, anticipated the transition they would make to actively prescribing:

"I think having a named mentor as a newly qualified prescriber will improve my confidence no end." **Rad.2. Diag**

The two following participants expressed talked about the support they felt they had on qualifying:

"…constantly got someone available, you can ask what you might think is a silly question…especially with those first couple of weeks of prescribing when you are nervous and it's a new skill set. Yeah, I can think back [I was] *not panicked, but like very, very nervous."* **Physio.1**

"Certainly, my experience was really good. I go the pad in the August, and I probably wrote four prescriptions in the first four months, whereas now I probably write four prescriptions a day." **Pod.2**

However, not all felt supported and ready to start prescribing, or felt unprepared. One expressed the nervousness they felt with the increased responsibility they had:

"[I would like to prescribe] *as long as it was all done properly and correctly. I want to make sure that I've got a good relationship with that consultant and I've got that back up. It's interesting, actually, because I probably feel more confident about it now. Which is odd, isn't it?"* **Diet.2**

Another was explicit that the growing length of time since qualifying as a prescriber was eroding their confidence and discouraging her from starting to prescribe:

"*Most certainly having a gap* [between qualifying and prescribing] *is going to affect how I feel… I think my confidence has probably, you know, I guess it wasn't as it was when I first came away from the course."* **Pharm.1**

5.5 Theme 3 – Supporting Prescribers in Practice

This theme describes participants views and experiences on the support they receive during training and prescribing. The theme of supporting prescribers in practice was developed from what participants said about the ways they were given – or not given – support and the effect this had on them and their practice. The multiple ways that support is available are presented in the sub-themes that make up the facets of this theme. These included peer support from colleagues, building trust around their prescribing role, supervision form senior colleagues. Different methods of supervision and continuous professional development (CPD) were discussed.

5.5.1 Colleagues and Support Network

The participants talked about how they were treated as prescribers by their colleagues and how they felt their support, or lack of it, affected them. Two spoke of how well supported they felt by their colleagues and the value of knowledge sharing:

"We do have a good team network… If I can't come up with a clear diagnosis then we'll go and talk as a team. Only last week, actually, and I felt to prescribe [anti-rejection drug] was outside of my scope of practice and the F1 said the same. In the end, the registrar called the pharmacist, and the pharmacist was brilliant. So, it's not a problem for me to call the pharmacists and say, 'I don't know what I'm doing here.'" **Nurse1**

"During the day it's great, there's loads of people around that you can have a conversation with… Some of the nurses have been absolutely brilliant because if I don't know how to prescribe something…someone will help me look at it… Yeah, there is support." **Para.1**

The value and effect of supportive teamwork was noted by the following three participants:

"I think what we've got overall is good. I think it's on us to utilise that more... We've got an in-house pharmacist within the ED team so you can run things by him and talk through cases with him which, yeah, is during the day hours, Monday to Friday. I think the environment's completely different [to community]. *You've constantly got someone available to run something by, so you've got that support."* **Physio.1**

"The senior team that we have here are so pro-ACPs and non-medical prescribers that it's really a good atmosphere to work in and I don't feel I'm fighting the system because they are so for us and they are all so supportive… There are always people who are happy to discuss prescribing decisions and I am a bit of a person that will need to ask

things four times before I go and do it. And you know, my appraisal – 'Stop asking questions, you know how to do it.' You know, it's almost like for my own reassurance…it's just my own little comfort blanket." **Nurse.2**

Part of effective teamwork was the ability to build trust within the team, which in turn supported the individual prescriber and their sense of self-confidence:

"You know building that trust with colleagues, colleagues who I already work with, but they're seeing this new aspect of your role… Initially you're writing prescriptions and you wanted to see the patient, and probably that has been relaxed a little bit in that respect, for my colleagues who know their job very well and if it's something that I'm quite happy to prescribe I'll do that and because I have built that trust up." **Rad.1.Ther**

The next respondent also understood the value of effective teamwork, but from the perspective of lack. They had not developed a sense of safety and confidence because they were in a more isolated working environment than other participants:

"But we do not work here - for various reasons - as part of a multidisciplinary team so we don't really have a lot of medical support... So, I think partly for that reason really is just feeling that you're a bit on your own with it, that's why I've stuck to the to the basic things... Yeah, I mean, I think if I had got more support, my motivation to expand my scope of practice would be higher. I would like to, really. I would love to feel that I was more comfortable prescribing through a wider range of medications… I mean obviously if I had to and all the GPs were, you know, in a coma then obviously I would. At the moment I feel it would potentially be a bit reckless." **Pod.1**

For a different reason, but in agreement, the next participant had not yet had the chance to settle in a team:

"*In that time as well, they rotated us in practice so that just put everything to pot. So there was no way I was going to - I needed to build that relationship with the GPs. Make sure they trusted me. Make sure they understood what I was there to do.*" **Pharm.1**

The expectations of colleagues were discussed as influential. One participant felt they were in a difficult position because their role of supplementary prescriber was not implemented, but there was an expectation they would make adjustments to insulin doses:

"*And then also within the diabetes role that I had we had what we called an extended role for dietitians and that the expectation would be that we would adjust insulin and advise and prescribe medications in effect. They didn't see the need for me using supplementary prescribing. My issue with that was that there was nothing written down to evidence that it was OK for us to adjust insulin. It was just sort of like do your job, that's what you expected to do, but then obviously, I knew having done my prescribing course that actually, that wasn't legal, so I didn't want to do it. I just felt very, very uncomfortable about doing it* [so I refused and did not do it].*" **Diet.2**

One commented on how colleagues or clinicians who had been on the same prescribing course were experiencing support and the effect they saw that having support had on their practice:

"*I mean a lot of the nurses that I was on the course with, I think it would be much more useful for them... But they've also got liaison with the consultant. So, my impression is that...they can work a bit more autonomously because they've got that back-up and*

somebody to talk it over with. And so, they've got a bit of a safety net. But that safety net enables you to be brave and work autonomously. So, you build on that knowledge. But I feel like I've never had a safety net, so I've always just been very, very careful and limited in what I've done." **Pod.1**

"On a day-to-day clinical basis, I'm very well supported medically. I work as part of a multidisciplinary team and as part of that we have twice weekly and Team ward rounds which are consultant led and then in between on sort of the other days that aren't consultant led are dietitian led. So, I have sort of regular updates and discussion of my patient cases with the consultant which is which is really useful." **Diet.1**

5.5.2 Supervision and Supervising Others

This sub-theme addresses the participants access to and the value they place on having supervision for their clinical and prescribing practice. This clinical supervision is presented here as distinct from how supportive their colleagues are generally. The feedback given by the participants demonstrate different forms that supervision can take and the value they place on their access to it. There were some who found that any supervision was informal and lacked structure or a named person who would be responsible for their supervision.

The first two participants talked about their access to one-to-one supervision they have on a regular basis:

"I mean, supervision's one of those things that takes many different forms, isn't it? I'm lined managed by dietetics so as part of that I have an annual appraisal, but in addition to that I have sort of every 6 to 12 weeks I have a one-to-one with my line

manager as well, so I can discuss any issues… So, I've got that opportunity, and also to discuss what I need in terms on my development on an ongoing basis." **Diet.1**

"We have lots of supervision I've got access to a team member every day that I work, so there's quite a lot of support and I've really appreciated that… We have 6-weekly supervision with a Band 8." **Pod.2**

The following person didn't have any one-to-one supervision, but was with other radiographers for group supervision and annual audit:

"It's not generally for prescribing but for all cases… It's a group, as radiographers we don't have individual clinical supervision… We've got a yearly audit that goes to the NMP leads. It's been quite useful, actually…reflecting on the sort of practice that you do in those times where you feel like you've done a really good job because you know that you've helped somebody, or those cases where you weren't quite sure and maybe you should have asked somebody else." **Rad.1.Ther**

The next participants also valued supervision but did not have the same access or same type.

"It took a long time [to get supervision] *The clinical supervision, just like I say, you can always ask people's advice. There's always at least someone you can go to. I just sometimes think it would be nice if there was a bit more structure for that."* **Para.1**

Others talked about the lack of supervision that has limited or prevented their prescribing practice. They expressed what kind of supervision they need to support their developing practice.

"You stick in your comfort zone basically. And I would be very happy to try to expand my prescribing formulary within my scope of practice, if I felt that I had that kind of backup really or that I've got like a mentor or somebody that I could just talk to about it, but that that person doesn't exist here. Not that I found, anyway." **Pod.1**

"[I'd like] I think maybe a little bit more structure from my supervisor. But realistically, I'm an adult like I need to be organised and then and initiating that myself. So, I think for me, I need to make use of that kind of support and supervision, have more face to face [supervision] *with patients as opposed to doing that online stuff and learning and writing up cases which, obviously, you get a lot from that and it's good for your portfolio and that sort of thing. But I think, yeah, for me it's probably I need to get back to being watched more with patients, which then will lead to kind of greater in-depth discussions about investigations about medications, about the whole shebang. So yeah, that's what I need to kind of take forwards myself."* **Physio.1**

Some participants commented on the person who was, or who they would like to be, their clinical supervisor. One expressed some dissatisfaction about the relatively little experience and current clinical practice her line manager has, and because of that feels they are not the right person to be a clinical supervisor:

"I have a named person. They're my line manager now. Which is funny. That person's only been a prescriber for a year and a half. He's 95% managerial, so he doesn't do clinical very often. So sometimes it can be a little frustrating. Because if you're going to be observed or have clinical supervision, needs to be with somebody who's got the same set of skills as you, or better. And it's quite hard when they're not clinical." **Nurse.1**

"I would almost see that the mentor and the sign-off person might actually be different people. I think unless you've done the supplementary prescribing…but doctors don't do that, do they? So, the person that's signing off doesn't actually understand what it is that you're having to do." **Diet.2**

Supervision and mentorship of others is one part of advanced clinical practice. Since 2018, experienced prescribing clinicians have been able to act as the clinical mentor, titled designated prescribing practitioner, or DPP, for student prescribers. Consideration was given to expanding their prescribing role and taking on the responsibility of being the DPP. Three participants felt they would welcome the perspective and responsibility that comes with supervision of others.

"I would get a lot out of that sort of responsibility, and I think I'll be well placed to do it with the position I've got within our department. And I think there's been a lot of discrepancies between universities in what they all allow still, because I did look at that with our local university… but they're still fully focused on the medical supervision." **Diet.1**

"It's been in my thoughts, and it was highlighted in a CPD day I had a few months ago and they were talking about radiographers taking over those roles if you've got a few years' experience underneath you…I think [next couple of years] *would probably be too soon for me I've ever been at work."* **Rad.1.Ther**

"I mean, you have to be qualified [prescriber] *for a number of years before you do it. It's a big change and it's a big step up, becoming an ACP. I think… I think being a nurse myself, I've got a good understanding of the issues that nurses might have with it and approaching it from a slightly different angle. So yeah, I'm more than willing."* **Nurse2**

One participant was clear she did not want to take on that responsibility, partly because she was aware of the level of commitment that takes, and felt that was incompatible with a part-time role:

"I wouldn't want it. I do 2½ days a week and even then, I'm called in left, right and centre." **Pod2**

There were also comments from some participants about the next generation of newly qualified prescribers:

"I'm happy to support people, but if they work in a completely alien field to me, I'm not the best placed person to mentor them afterwards." **Diet.1**

"I think having them prescribe with somebody…not to cross examine him, but to be his support network." **Nurse.1**

"One of my [ACP] *trainees qualified* [prescribing] *8-9 months ago and it's going to be another 8-9 months before she's done the* [clinical assessment] *modules at the university where they have then said, 'OK, you're free to go and prescribe.' She has got this qualification and the fact that she's not using it, it's not going to be good for her… We're going to see if we can change her disease area to something we see more commonly."* **Nurse.2**

5.5.3 Evidencing Fitness to Practice

The question was raised by two participants of how prescribers are monitored and can demonstrate continued fitness to practice along the length of their careers. Although two commented on this specifically, the importance of their comments is highlighted here and discussed in the next chapter. One commented that she did not know the consequences of not using her qualification and what that meant for her professional registration:

"If I was called up to submit my portfolio and I was then seen to not have done enough CPD on my prescribing through no fault of my own, because I've not been able to use it, what then happens? Is my whole registration at risk? Or do I get that SP taken off me? In which case, I would rather be the person that takes it off me because I know I'm not using it and I know I haven't got the skills to use it at the moment, or the ability to use it at the moment. But who, then, who monitored it? Who is responsible for making sure that I'm a safe prescriber? How does that work? Is my whole registration at risk if I'm not using it because it's attached to my HCPC registration? Or is it just that little bit that's attached? That's what worries me more, because I don't feel it is monitored." **Diet.2**

The second participant reflected on the lack of formal requirements for updates from their professional or regulatory body:

"Sometimes I thought, I've got this this right to prescribe, but there's nobody in the last six or seven years said, 'Are you still fit to be doing this? You've not done any kind of extra refresher.' There's no kind of mandate every three or four years to submit resubmit some sort of portfolio or case studies or reflections. There's none of that." **Pod.1**

5.5.4 Value of Continuous Professional Development

The role and perceived necessity of continuous professional development, ability to engage with it and its application in practice was discussed by the participants. While there is no legal or professionally mandated requirement for CPD specifically in relation to prescribing, the value that prescribers themselves place on CPD and its applicability to their clinical practice is presented here.

One participant spoke of the difficulty in getting access to CPD and why it was wanted. They were successful and this includes prescribing focussed CPD:

"Bit difficult, this is our sticking ground, trying to get study time because… we've had this discussion, actually. I think one of the downfalls is it's called study time and then they just think that ACPs are wanting study all the time and, you know, just go off for the afternoon. So, we've changed it to non-clinical time. [We] *keep banging our heads on the wall about the four pillars of advanced practice and saying, you know, this is not entirely clinical… We do, in the Trust, we do have an NMP update once a year."* **Nurse.2**

The following participants talked about the in-house CPD and how this is positively received:

"I think we're quite lucky because we have that monthly [teaching] *session and* [some] *NMP specific… And we're very lucky in terms we get a day a week for CPD, which is for ourselves, but also for the department."* **Physio.1**

"Every year the Trust puts on – or it used to – a big annual conference every year for non-medical prescribers, but what they did during lockdown was split it into four monthly sessions which I didn't' find as useful because they were very specific. For example, we had one on Asperger's, which was good, actually, but not necessarily relevant because I don't prescribe for Asperger's." **Pod.2**

There were different experiences with how CPD was delivered. The next participant talked about dissatisfaction with online CPD and would have preferred a different format.

"I mean, there's modules on our little learning hub, but I don't think they're quite aimed at the right level. It's your medicines management and things like that, whereas I think there just needs to be a bit higher level… I felt like I hadn't done any sort of

prescribing update and I signed up to an online one and it was £50, and I just thought, shouldn't somebody be doing in house?" **Para.1**

The next participant had access to different forms of CPD and found this useful:

"We've got sort of a yearly audit that goes towards the NMP leads. I'm just coming up to do that now and it's been quite useful actually… But having to attend sort of a course, a yearly update really, is really very, very helpful… just being able to network with other practitioners across the country virtually…I've found that very helpful." **Rad.1.Ther**

The next two participants discussed why CPD was important to them and their prescribing practice:

"I think CPD is very important. I think I've been very lucky with the ongoing training. In terms of the prescribing, I think it is really important because the drugs change all the time and I'm seeing all these updates and changes." **Rad.2.Diag**

"I'm very pro-CPD, keeping up to date with practice. I went to a regional conference up in the North-West where I did both, I presented from a dietitian perspective but then I took part in the learning opportunities that were on offer from that prescribing day." **Diet.1**

There was also comment from those who, for their own reasons, have not accessed CPD since qualifying as prescribers.

"So, what I'm prescribing now is probably the same as what I was doing a few years ago with no refreshers in between, so a lot of your factual knowledge, it kind of wanes; the practice gets better but the theory's neglected. I've done things off my own bat. Like I've done an audit of steroid injections and I've shadowed people… Potentially I

could be prescribing for another 13 years or whatever, and nobody saying 'Are you still fit to do this?' You have to re-register every two years with the HCPC, but that side? No. Apparently, I could just keep going." **Pod.1**

5.6 Theme 4 – Social Behaviour in Prescribing

This final theme was developed from the discussion of factors that are an intrinsic part of prescribing practice and aspects or structures that affect the prescribers' practice. The sub-themes describe these factors – the risks involved in prescribing, the risk of and concerns about medication errors, using and applying the national Competency Framework for All Prescribers (RPS, 2021) and organisational factors that were important to the participants in encouraging or hindering their practice.

5.6.1 Aware of Risks

Awareness of the increased risk and responsibility involved in being a prescriber were expressed. The first participant is reluctant to take responsibility for increased risk in their practice, especially when there is no renumeration on qualifying as a prescriber:

"And I'll be very honest, it's more of a risk involved for me personally, and do I feel like I'm being paid enough to accept that risk? Not really." **Pharm.1**

"In terms of my near miss, actually because I picked it up myself before I finished it reassures me. I'm very hot on trying to make sure everything is accurate." **Diet.1**

The concern that comes with the risk of prescribing is expressed in the next quote. With awareness of risk comes effort to keep practice safe, and sometimes worry:

"Because for me, prescribing is a big part of it [advanced clinical practice] *and it's a big responsibility, which maybe I just wasn't quite prepared for. I mean, I do my very best and I check things and make sure I've done everything I can to be safe. Sometimes you go home, don't you, and you're like (pulls worried face)."* **Para.1**

The next participant talks about the risks in prescribing and the fact that it would be patients who would be the one to experience the result of unsafe prescribing or prescribing mistakes:

"But potential scenario of poor prescribing it is causing harm. Which isn't good for anybody, especially the patient. And I think like with everything, you don't be… don't expect and don't put pressure on yourself to know everything. There's a heck of a lot to know. And best that you go to the BNF and you take an extra minute or an extra 90 seconds. In the context of a day, if you see 10 patients, that's 15 minutes." **Physio.1**

5.6.2 Prescribing Errors

In this sub-theme, participants talk about their experiences of making a prescribing error and the response in terms of support afterwards. One respondent describes an error made in not specifying the formulation should be modified release, and what she felt was an unsupportive response of the prescribing lead:

"I felt horrendous, just for missing M.R. [modified release]. *I didn't put the wrong dose, or the wrong drug. I reported it myself. I didn't write the wrong dose. I didn't write the wrong drug. I just forgot to put modified release. So, he* [NMP lead] *said to me, so you tried to justify your mistake?' So that, you know, made me feel about half an inch to a gnat. I had to get every prescription double checked…. I thought, 'I can't every prescribe again,' and I must have wasted two or three prescriptions because I thought I'd written it wrong."* **Nurse.1**

This participant described the fact that checks were done and Pod2 noted the patient had already been taking a penicillin-based medication despite the notation of allergy and was told they should not have re-prescribed the medication:

"I'd given a penicillin to somebody who had pen allergy on their notes but was taking co-amoxiclav prescribed by the GP. I can't do it without saying it. So, I asked the patient if they were pen allergic and they said they weren't, and I said but it is on your notes, but you are taking it. Have you had any side effects? So, from my perspective. I had done the checks. My supervisor said it was ok if the doctor wanted to prescribe it, but we shouldn't." **Pod.2**

The third participant recognised and took responsibility for a prescribing error and has reflected on the event:

"I've prescribed an unlicensed medication. So, it's under the CMP, which is agreed with the doctors and the thing I didn't check with this chap, he didn't actually take the medicine after I had prescribed it for him because he had read the leaflet, so he was very good but he had renal failure… which is a contraindication to the medication and something that I hadn't come across with that medication or with those patients before. So, it's something I didn't look into, it wasn't on the clinical letter, I didn't ask that question. I phoned him, 'How did you get on with it?' 'Oh, I haven't taken it because it says this.' I was kicking myself." **Rad.1.Ther**

There are several who reported making errors that were caught and corrected before the medication got to the patient:

"When I've written a discharge prescription and it's gone to the pharmacy and then they phoned up and said, 'Did you mean to give this drug or this antibiotic at this strength?' and a couple of times it's been, 'Yes, I did,' and explain why and that's fine.

And an anticoagulant that I've got mixed up which ones are twice a day and which ones once a day. So, they phone up and they're really good." **Nurse.2**

With some comments about colleagues' or the student prescribers they are mentoring, experiences and concerns, or express worry about the possibility of making an error themselves when they are in a position to understand what can go wrong.

"The two are saying to me, they're more scared about making a mistake and having to be autonomous about that." **Nurse.1**

"I do know someone who has, and it was really good and they had a conversation with the consultant. It was obviously datixed. It was only like a minor thing and basically, they did get some support for it and they weren't, like hauled over the coals." **Para.1**

5.6.3 Competency Framework

This sub-theme presents the variation of knowledge and application of the Competency Framework (RPS, 2021) that sets the standards expected from prescribers. Two spoke about actively using it in formal review of their practice or in teaching sessions:

"I suppose more from a discussion, appraisals and peer review and audit side of things rather than day-to-day referring to it." **Diet.1**

"One of the consultants does teaching for us and what he said is that's something we can discuss in teaching so that we can, at least, think about those particular requirements. I do actually think it is very useful." **Para.1**

Another participant, who had qualified as a prescriber prior to the Competency Framework became a compulsory part of prescribing education, was unaware of it:

"So, when you say the competency framework...? I Well, I will check it out though, because that that's and that seems like something that perhaps actually if I tried to take that on and look at it, you know that would perhaps make me feel a bit more confident. It sounds like something I should be aware of, doesn't it?" **Pod.1**

Others confirmed they don't often refer to it but feel it underpins their practice, even though one is unclear about the structure:

"If I'm being honest, in terms of do I use it? I probably don't. I think the nine areas – are there nine areas? I can't remember. Those areas I kind of naturally use them and it's part of your practice and part of your discussions with patients. And ongoing education. But I think, day to day, that I don't specifically think, 'Alright, this part of the framework,' but it's embedded in my practice." **Physio.1**

"I suppose it's sort of second nature, though. Ethics, thinking about the person as a whole. Everything really. Although you do it naturally, it puts it, when you're qualifying, it's enabled you to talk about it in your supervision in set ways and lay out your supervision, so it's useful." **Pod.2**

"No, no, I don't really use it. I'm aware it's there and I would go to it if I was asked to do anything that I wasn't sure about or, you know, didn't feel comfortable doing in the way of prescribing, but I haven't been put in that position. I think it's a bit like the Code, isn't it? Or the medicines management when you're a nurse, you're aware it's there, you know what it is, but you also, you read it when you first qualify when you first get it and you, you take out the salient points." **Nurse.2**

5.6.4 Organisational Factors

Participants talked about how their work environment and how accommodations for prescribers were made. The following comments refer to the effect of these factors on their practice and how they felt as individual prescribers in that system.

Two participants commented on the fact they had no financial renumeration on qualifying as a prescriber and felt unhappy about the lack of acknowledgement of the increased responsibility that comes with the prescribing role:

"The other thing that made me a bit unhappy about prescribing when I first qualified was that I was going to be prescribing on the same grade, and so I thought, 'Why would I do that?' **Diet2**

"Whether the pay matches the risk involved, I'm not sure that it does." **Pharm.1**

One allied health professional whose work crossed clinical sites found an organisational barrier to prescribing arose from each site being reluctant to use their prescribing budgets to fund their prescriptions:

"A lot of it was funding, you know, 'Goodness me, we're going to have all these additional people prescribing,' rather than seeing it as a beneficial thing. They didn't want us to use the hospital prescription pads. If we saw a patient that we knew needed, I don't know, just you know an extra vitamin or something, then they wanted the GP to prescribe that rather than us, or Orlistat, we weren't allowed to use that prescription pad. The consultants were, but we weren't." **Diet.2**

Comments from three participants about significant delays in starting to prescribe due to organisational systems that were not updated to include their prescribing role. Not anticipating the need to do this resulted in months passing post-qualifying before the system could accommodate them:

"It was a bit of a gap [a few months] *between doing my training and actually prescribing which was at the time very frustrating…* [On qualifying] *I requested an FP10 prescription pad, and I don't think they'd had a physio request one before and it just took months and months and months and by the time it actually came and the pad arrived. I was then moving on to a different role within the same Trust where it's all electronic."* **Physio.1**

"In 2018, as the first dietitian prescriber within my organisation, it took months to get through, sort of the local hurdles... It was just knowing the right process and who to go to and what needed to be put in place to set it up more than anything… So, it took longer than it needed to. We did end up going around the houses a little bit of the wrong people, but instead of them just telling us who we needed to go to, which would have made things a lot simpler, we just got ignored. And the I remain the only dietitian prescriber within our organisation at the moment." **Diet.1**

"I feel the gap [between qualifying and prescribing] *has had a negative impact on my confidence."* **Rad.2.Diag**

One participant did not have their job description updated, and by the time it was they had lost confidence:

"I still had my old job description. They hadn't been processed very quickly, so that made me really nervous about using it." **Diet.2**

One participant talked about local processes that meant it was more convenient for the patient if the prescription requests were sent to the GP rather than writing it themself:

"I'm not sure what the prescribing software is, whether it's part of EMIS for the GPs, but we don't have access to that... The other issue actually is as a purely practical one, that if I write a prescription, I have to hand write it so they'll either take that to the pharmacy in town or down to the pharmacy in the hospital. But if a GP does it, it's done online. It's immediately transmitted. The patient doesn't need to worry about it, and then it either gets delivered to them or they'll go and pick it up from the local pharmacy. So, there are practical reasons why it's actually better as well for us to punt it over to the GP." **Pod1**

5.7   Summary

Four themes, with their own sub-themes, were developed from the interviews and the results presented in this chapter. Theme One, becoming a prescriber gives an overview of the participants experiences of intrinsic and extrinsic factors in deciding to become prescribers, and how the rise of the advanced clinical practice role has influenced the uptake of prescribing roles. Key findings from this theme are:

- not all feel sufficiently prepared, perception of how useful prescribing actually is in their clinical role and especially if there is lack of support received which undermines confidence.

Theme Two, the diverse nature of the prescribing role presented variation in the experiences of participants according to their profession and use of their qualification. The key findings from this theme are:

- the resentment caused by the fact that all professions undertake the same education and assessments, but some professions are subject to severe restrictions imposed by supplementary prescribing.

- lack of confidence can either restrict prescribing practice or result in never prescribing.

- being a newly qualified a time when prescribers are particularly vulnerable in terms of their confidence.

Theme Three, supporting prescribers in practice has shown the importance and effect of colleagues' attitudes and how the prescribers view their own roles. Key findings from this theme are:

- Support from colleagues is critically important in the developing confidence and practice of prescribers. Supervision from senior mentors is valued. The format of supervision and CPD are varied and, although separate, both are part of ongoing professional development.

Theme Four, social and cultural behaviour in prescribing, explores the culture in which prescribers work. Organisational systems, professional standards and awareness of the consequences of prescribing errors are presented. Key findings from this theme are:

- organisational systems that cause delays in a clinician beginning to prescribe

- concerns about the possibility of making prescribing errors.

Chapter Six

DISCUSSION

6.1   Introduction

Chapter 4 presented the results from Phase 1 and Chapter 5 presented results from Phase 2. Phase 1 was a quantitative survey and the findings of this directly informed the development of the protocol and interview guide used in the Phase 2 qualitative semi-structured interviews. In this chapter, a summary of the results from both phases are given, which have been aligned with the study objectives. The implications of the findings of this study are discussed in conjunction with what is reported in current literature. Specific comment is made where findings contribute to new knowledge or confirm or expand current knowledge. Understanding of the significance of the results are presented in the discussion. Finally, the findings in relation to the use of the theoretical framework are presented, finishing with a summary of the key points of this chapter.

6.2   Summary of Key Findings

Phase 1 key findings showed variations in practice and experience in several areas. Almost half lacked confidence on qualifying as a prescriber, and that was compounded by the fact that almost a half of total respondents felt they did not have the level of support they felt they needed on qualifying. It was an unsurprising finding that there was a wide range of responses to questions about the *Competency Framework* (RPS, 2021), with 9.8% of respondents unaware of its existence. Of interest is that 4.7% of the Phase 1 sample have never prescribed, over half had positive experiences of supervision for their practice, including focus on their prescribing. While only 58.1% had been able to access CPD in the previous 12 months, 86.7% said it was valuable and made a positive

difference to their practice, Finally, of those who had made an error, *n*69 had experienced loss of confidence and *n*20 had not regained confidence and continued to be worried about prescribing. These findings were the foundation of developing the interview protocol (Appendix 11) and interview guide (Appendix 12). The protocol provides a specific outline of how Phase 1 findings and the research objectives informed the development of the interview schedule. The interview schedule gives the questions and possible prompts that were used during each interview. These tools required the researcher to consider consciously what questions needed to be asked, what approach to take so nothing was forgotten during an interview (Smith & Osborn, 2003). The semi-structured interviews were used to develop the Phase 1 findings in greater depth.

Phase 2 key findings were as follows: the variation in feeling prepared to undertake the prescribing role of prescribing was explained. Supplementary prescribers highlighted their difficulties in implementing their role, and in particular it was shown to be problematic for those working in advanced clinical practice roles. Echoing the findings from Phase 1, over half newly qualified prescribers lack confidence on qualifying and are vulnerable at that time. When colleague support and supervision were discussed, they were found to be necessary for feeling safe and functioning confidently as prescribers. The response to CPD was similar to colleague support, in that it is highly valued as part of safe prescribing. Most felt supported during their post-error experience (of those who had made a prescribing error) and some reported having colleagues who were too fearful to prescribe. It was found that IT problems were causing significant delays to a few prescribers in starting to practice.

Together, the key findings from both phases are:

1) While supplementary prescribing, which is historically restrictive, the nature and extent of its restrictions in practice is particularly problematic for those allied health professionals who are working in advanced clinical practice roles.

2) Many newly qualified prescribers lack confidence at the time of qualifying and this vulnerability is compounded by factors such as level of available support not matching their need.

3) There are multiple reasons why some qualify and never prescribe. This study has shown that lack of confidence can adversely affect an individual's willingness to prescribe. The reasons for never prescribing can also be considered in light of what is learned about newly qualified prescribers, although they are distinct issues.

4) The importance of colleague support and / or formal supervision is explained and, in those findings, show through respondents who either have remarkably good support, or have none, and the effect on their prescribing practice is shown.

5) CPD is valued by the vast majority of prescribing practitioners, whether newly qualified or with long term prescribing practice. It is experienced as important to safe prescribing.

6) Prescribing errors are not uncommon. The remit of this study was to ask about the incidence of errors happening and what the prescriber's post-error experience was. Most reported positive and supportive experiences. Some have experienced a loss of confidence as a result and continued anxiety about prescribing.

7) Organisational factors are varied. Although in the minority in this study, it is apparent that there are still some who are experiencing significant delays to their prescribing practice because of IT systems that are not updated to recognise their qualification.

8) The Competency Framework and how it is used has not been discussed in previous literature. The framework has been compulsory in prescribing education only since 2018, and this is reflected in the wide variance in both use and awareness.

9) Prescriber confidence is a factor under discussion. It is something that is relevant to each of the key findings, and this is acknowledged. It's influence, and the factors that influence it, are discussed separately.

6.3   Demographics and Qualifications

In Phase 1 the questionnaire sample included all professions who are eligible to prescribe in the UK and were from England, Scotland, Northern Ireland, and Wales. In Phase 2 the n11 interviewees included all but midwives. However, all eight prescribing professions have been represented in the study, although not in both phases. Although the sample sizes of each profession are not equal, or proportionate in representing the population size, this is the first study that includes all the professions currently eligible to undertake prescribing in the UK. Courtney, Carey and Stenner (2012) conducted a study that included most of the prescribing professions at that time (nurses, pharmacists, physiotherapists, podiatrists, radiographers and one optometrist, although no midwives were mentioned). Since then, physiotherapists, podiatrists and therapeutic

radiographers have gained independent prescribing status, and dietitians and paramedics have been given supplementary prescribing rights.

In Phase 1 there was a mismatch noted in the declared prescribing qualification held and the declared prescribing practice. This mismatch was where independent prescribers said they were practicing as community prescribers; or independent prescribers saying they were practicing as supplementary prescribers but working in acute/urgent environments where that would be not possible in any practical sense. In Phase 2, a small number of participants discussed that some colleagues were unsure what supplementary prescribing was, ranging from thinking the supplementary prescriber was a student, to managers unsure how many drugs can be included on a CMP. Given the mismatch reported in Phase 1, there is a possibility that 'supplementary prescribing' may be misunderstood and associated with community prescribing roles, where the scope of what can be prescribed is heavily restricted. There is some uncertainty about supplementary prescribing, the results indicating some confusion about what it is, with some Phase 1 respondents unsure if they use it and others declaring they do when it is clear they don't need to or cannot in their clinical environment; this is a factor that has not been discussed in other literature. Largely, the mismatch in this study is the in the declaration of prescribing as a supplementary prescriber by those who hold a community prescribing qualification only, or by professions who would have no need to use it in their scope as independent prescribers.

6.4 Discussion of Key Findings

6.4.1 Inequality Between Professions Arising from Legal Restrictions

The results demonstrate explicit frustration and resentment at the significant restrictions imposed by the supplementary prescriber role. There are two circumstances when these restrictions arise; first, with dietitians and diagnostic radiographers, who currently cannot hold independent prescribing status in the UK; second, with allied health professionals – in particular, podiatrists and physiotherapists – who are extremely restricted by law in which controlled drugs they can prescribe, or professions that cannot prescribe any – that is, dietitians, radiographers and paramedics. This is despite the fact that the Human Medicines Regulations has identified exemptions – that is, a short list of controlled drugs for therapeutic radiographers and paramedics (not diagnostic radiographers or dietitians) that they can be permitted to prescribe. However, although this is sanctioned in the Human Medicines Regulations, it cannot be put into practice until the Misuse of Drugs Regulations is also amended. The Advisory Council for the Misuse of Drugs has already recommended this is done for therapeutic radiographers (ACMD, 2018) and paramedics (ACMD, 2019) but as of August 2023, this has still not been done. The common complaint expressed by all parties in both circumstances is that they have undertaken the V300 and identical assessments alongside nurses and pharmacists who have no such restrictions on their prescribing practice. In particular, a diagnostic radiographer talked about her own professional body who supported radiographers – diagnostic as well as therapeutic – in undertaking Advanced Clinical Practice roles but who, as stated by the radiographer participant, saw no need for diagnostic radiographers to have independent prescribing status. It must be

understood that, of course, the change of law lies solely in government systems, not with professional colleges.

Clinical practice has changed over the last decade; all eight professions included in this study are able to continue their education (not confined to the prescribing qualification) to be advanced clinical practitioners, enabling them to move beyond their traditional areas of practice. For example, Advanced Clinical Practitioners who are pharmacists can now work in A&E or GP practices; paramedics can work in A&E or primary care, and radiographers are involved in the wider multi-disciplinary team and work on wards.

The problems with supplementary prescribing are illustrated in findings from Phase 2. A supplementary prescriber cannot write a prescription until a clinical management plan is in place. A doctor is required to sign as the independent prescriber on this tripartite agreement – independent prescribers of other professions are currently unable to lawfully act as the IP on a clinical management plan (Prescription Only Medicines (Human Use) Amendment Order, 2003). This is reported by some participants to place an additional burden of time and responsibility on another clinician in the process. In terms of safe processes, supplementary prescribing has not solved the issue of potential points where errors can occur. This is more apparent in some situations, for example, dietitians are in a unique position compared to other professions in that they make prescribing decisions for their patients as part of their clinical, dietitian role, even without a prescribing qualification. They then need a doctor to write and sign the prescription for dietetic products or parenteral nutrition (a particular speciality within dietetics) when the doctor is unfamiliar with the product or does not have the

knowledge to calculate what has to go in the parenteral nutrition, which is individually calculated for each patient and can change over time according to need.

There is little direct discussion of the role and practice of supplementary prescribers in the literature. Courtenay and Carey (2008) reported that supplementary prescribers found their practice restricted by difficulty in finding support form medical colleagues, or a doctor who would act as the independent prescriber in signing the CMP. While this study has shown this is not a universal problem, some participants talked about colleagues who refuse to start prescribing, or to apply for the course until the law changes. This is a strong testament that supplementary prescribing has perhaps outlasted its usefulness. Another view expressed by one participant, in line with findings from Dobel-Ober, Bradley and Brimblecombe (2013), is that supplementary prescribing could be used to help a prescriber gain confidence, but that independent prescribing status should be held by all qualified prescribers. While this is a view expressed by the minority in this study, it was from the perspective of, 'if we must have supplementary prescribing it should be used to support the confidence of newly qualified prescribers, and everyone should therefore have both supplementary and independent prescribing'. At this point, it is prudent to point out that Barker-Begley (2019) have findings that show the use of a restricted personal formulary, if done in a structured way on an agreed timeline, also effectively supports new or unconfident prescriber. A personal formulary would achieve that without the same time and workload burden imposed by supplementary prescribing.

Supplementary prescribing has not fully addressed the problem but has shifted it to a different place in the process. A CMP requires the signature of a doctor and because they are acting as the independent prescriber, they have overall responsibility for the CMP and could be called to account if anything goes wrong. This principle applies in all uses of supplementary prescribing, regardless of the profession of the supplementary prescriber or the medicines being prescribed. To continue the example with prescribing dietitians, doctors are still in the situation that they are agreeing to a plan for a dietitian to prescribe products they do not have the knowledge to prescribe themselves, and the dietitian cannot proceed without the doctor's signature. Even though the dietitian can, as a supplementary prescriber, sign their own prescriptions, the same issue exists.

The situation with allied health professionals restricted or unable to prescribe any controlled drugs is similar. One clinician assesses their patient and is obliged to ask another clinician to write the prescription. The professional who signs the prescription has responsibility for that, and so ensuring that assessment and drug choice are correct must be very clear. Dobel-Ober, Bradley and Brimblecome (2013) study reported that prior to the change in law in 2006, mental health nurses (in fact, this applied to all nurses) were practicing only as supplementary prescribers. Some participants felt positively about SP and that using it when newly qualified would build confidence. They also reported by participants that being a supplementary only is unnecessarily restrictive and that being granted independent prescribing rights would be the solution.

In their multi-profession study – nurses, pharmacists, and a physiotherapist, a podiatrist, radiographer, and an optometrist – Courtenay, Carey & Stenner (2012) questioned the

usefulness of supplementary prescribing, citing the continued low use of and restrictive nature of supplementary prescribing. Findings from this study show that there is a very different situation with supplementary prescribing, with significant role development for multiple professions in advanced clinical practice over the last decade, and the increasing demands on the NHS. However, the processes necessary to implement supplementary prescribing prevented *n*430 (49.5% of the sample) from prescribing (Courtenay, Carey & Burke, 2006) and there was no improvement two years later (Courtenay & Carey, 2008). Historically, pharmacists found the restrictions of supplementary prescribing a major reason for not prescribing (McCann et al., 2011) but this is no longer reported by pharmacists as they have had independent prescribing rights since 2006 (Medicines for Human Use (Prescribing) (Miscellaneous Amendments) 2006). Those pharmacists who had supplementary prescribing rights only have since then largely converted their qualification to include independent prescribing. Courtenay and Carey (2008) did recommend that legislation should consider allowing specialist nurses to adopt the role of IP when writing a clinical management plan. To date, this has not been fulfilled.

The law in the UK regarding the prescribing of controlled drugs is unusual. Allied health professionals can prescribe either very few or no controlled drugs as independent prescribers. However, depending on their area of clinical practice, supplementary prescribers can use a CMP to prescribe controlled drugs. The unusual legal element is that, since 2012, two acts of law must be amended to permit independent prescribers this right. The Human Medicines Regulations will define the exemptions (X profession cannot prescribe controlled drugs except for the following ones listed) and the Misuse

of Drugs Regulations then has to be amended to permit the profession to prescribe (Gallagher, 2021). The relevance is that the Human Medicines Regulations have already been amended to permit a small number of named controlled drugs to be prescribed by therapeutic radiographers (Human Medicines Regulations (Amendment) 2016) and paramedics (Human Medicines Regulations (Amendment) 2018) but until the Misuse of Drugs Regulations is also amended, it is still not legal for these two professional groups to prescribe the defined controlled drugs. The matter or paramedics being able to proceed to prescribing the agreed controlled drugs is due to be debated in the House of Lords on 14th September 2023 (Collyer Mallett, 2023). There is no mention, however, in this report of the therapeutic radiographers. The House of Lords will take into consideration the recommendation from the Advisory Council on the Misuse of Drugs (2019) that paramedics should be able to prescribe certain controlled drugs as independent prescribers.

New knowledge from the findings of this study show that, while supplementary prescribing is not a new phenomenon, but the associated restrictions are increasing, potentially due to the advanced clinical practice role (Health Education England (HEE), 2017). This is relevant to all professions who use supplementary prescribing as their sole prescribing role, or to supplement restrictions in their independent prescribing role. However, the nature of a CMP is to allow a supplementary prescriber to prescribe for a patient who has a long term, ongoing or episodic medical condition means that supplementary prescribing is not useful in acute situations or clinical areas, such as Accident and Emergency or Urgent Care. There is little justification to continue to impose supplementary status as a solo prescribing role.

Several participants reported having colleagues who either do not use their supplementary prescribing qualification or will not undertake the course until the law changes to allow them to be independent prescribers. It is acknowledged the participants were reporting the experience and point of view of their colleagues and so could not be explored in depth in this study, but it was considered to be noteworthy.

6.4.2 Newly Qualified

Results of this study show that prescribers are not fully confident when they first qualify, aligning with the findings of Charter, Williams and Courtenay (2019) and can be compounded if there are significant delays between qualifying and starting to prescribe. A significant number of prescribers feel they do not have the level of support they feel they need on qualifying. There are two aspects to this; first, general colleague support and second, supervision from a senior colleague or colleagues who can guide their professional development and application of their learning. The findings from the survey by GPhC (2016) and Stenner, van Even and Collen (2019) both discussed general colleague support as necessary in supporting prescribers' confidence and practice. This is discussed further in section 6.3.7 in this chapter. While findings of this study showed 30.4% felt they did not have the level of support they needed on qualifying, it is interesting to note that Courtenay, Carey and Stenner (2012) asked about levels of confidence at the start, during and after the prescribing course and found that support was at its highest for the newly qualified, but they still reported that almost half felt they did not have an adequate level of support. These issues will be discussed later in this chapter, in 6.3.8

Qualifying as a prescriber is a different phenomenon than qualifying in the foundation profession. Being a full-time student and becoming a qualified healthcare professional is a very visible process – full-time student to qualified, a change in uniform, a change in level of responsibility in all aspects of their role. Although the national requirement has lowered the number of years required as a qualified practitioner before undertaking prescribing education, it is a post-graduate course and currently undertaken by experienced practitioners. Qualifying as a prescriber is a less overtly visible transition than the transition of qualifying in their foundation profession, going from part-time student to qualified prescriber within the scope of their clinical role. Benner (1984) details the progression of experience in her seminal work, *Novice to Expert*. In the case of newly qualified prescribers, they may be competent, proficient or expert in their clinical fields, but underlying that is their novice or advanced beginner status as prescribers. Findings from both phases, and in more detail in Phase 2, show that the assumption of responsibility for the safety critical activity of prescribing, wedding new skills and knowledge to their existing skills and knowledge, is reported to be 'scary' and 'daunting'. This was reported in Phase 2 by n4 participants in this study. In Phase 1, 46% of respondents said they were unconfident or very unconfident at the time of qualifying as prescribers. This is in agreement with previous research, which has shown that there can be a loss of confidence after the end of the course (Charter et al., 2019; Maddox et al., 2016). The level of wastage is the reason why understanding and paying attention to the transition newly qualified prescriber go through is necessary.

6.4.3 Never Prescribed or Restrictions

This study has shown that there are still prescribers who have never prescribed after completing their education and qualifying. The most notable reason for this, as reported by participants, is lack of confidence. Multiple factors account for this. Results showed that some prescribers do not prescribe due to lack of confidence. Different factors meant that some prescribers are not able to or were prevented from using their qualification. Charter, Williams and Courtenay (2019) identified that delays after qualifying compounded loss of confidence. These factors were the lack of support post-qualification, feeling there was no need for them to prescribe and lack of the prescribing budget to support the increased prescribing activity. It has been highlighted that those who are reluctant to prescribe or who have not prescribed have all said that they want access to CPD to support them toward starting to or expanding their scope of prescribing. This aligns with Brodie, Donaldson and Watt (2014) whose findings show that CPD was valued by newly qualified as well as long experienced prescribers in supporting safe practice. Other current literature discusses or asks about those who are not currently prescribed, but do not differentiate between those who have never prescribed and those who have stopped prescribing, even if reasons for not currently prescribing are given (Drennan, Grant & Harris, 2014; Latter et al., 2010).

The literature, both current and older literature from the advent of independent prescribing, has very little focus on those who are qualified but have never prescribed. Latter et al. (2010) whose sample was nurses and pharmacists, and McCann et al. (2011) whose sample was pharmacists, all reported that between 7% and 48% of their samples had never prescribed. McCann et al. (2012), in their sample of pharmacists, cited lack of

funding and increased workload and paperwork associated with supplementary prescribing as reasons for never prescribing. One participant in Phase 2 cited lack of prescribing budget as one of the multiple reasons that prevented them from prescribing and had, at the time of interview, never prescribed. Other participants spoke about colleagues who qualified but would not prescribe or who would not undertake the prescribing course until the law changed allowing dietitians and diagnostic radiographers to have independent prescribing rights.

Latter et al. (2010) report that 93% of their sample of *n*1462 nurses, and 90% of their sample of *n*358 pharmacists in their sample had prescribed. They went on to report 86% of the nurses and 71% of the pharmacists were currently prescribing, implying that there was a percentage who had never prescribed. Reasons for the lack of prescribing activity were not addressed at all. In contrast, this study shows that reasons for never prescribing are largely associated with lack of managerial and colleague support, and lack of confidence. This brings a new understanding that, although there are multiple reasons why practitioners do not use their qualification, there are specific areas where prescribers' needs are not being met. It highlights that, for practitioners who never prescribe, the transition from student prescriber to newly qualified prescriber is a vulnerable time. The distinction between understanding why some qualify and never prescribe and why some stop prescribing may be useful to investigate further.

6.4.4 Colleague Support and Supervision

Findings in this study show that support from colleagues and understanding of the prescribing role is highly valued by prescribers. This has consistently been considered

important in the literature on facilitating prescribing practice (Dobel-Ober, Bradley & Brimblecombe, 2013; Herklots, Baileff & Latter, 2015; Tatterton, 2017; Stenner, van Even & Collen, 2019) and was a significant hinderance if that collegiate support was absent (Courtenay & Carey, 2008; Daughtry & Hayter, 2010; Hindi et al., 2019; Maddox et al., 2016; McCann et al., 2011; Smith, Latter & Blenkinsopp, 2014). A decade ago, studies were showing that some prescribers faced hostility or disapproval for their prescribing status. That has not been reported in this study and it is an encouraging finding to see the progression from colleague disapproval hindering or preventing prescribing practice, to findings in this study showing that colleagues are supportive and are willing to share knowledge. Where this support was absent for one participant – and scope and volume of prescribing was adversely affected as a result – it was due to the working environment and lack of direct access to a multi-disciplinary team (MDT), not active disapproval by peers or senior colleagues.

There are positive changes in prescribing in that, over time, there is no longer the active hostility toward prescribers that was reported by Courtenay and Carey (2008), McCann et al. (2012) and Ross and Kettles (2012) but absence of positive support is still apparent for some. This is an aspect that can be considered alongside planning support for newly qualified prescribers and from there, extended and, if necessary, reshaped to accommodate what will be useful for prescribers as they become more experienced but still need structures to support safe prescribing practice.

A related but separate matter is that findings show the value of clinical supervision. This oversight by a senior colleague or line manager takes multiple forms. A range from

structured supervision at given intervals to less formal oversight by a senior colleague have been reported in this study. This includes direct clinical supervision and instruction, annual appraisal, or one-to-one meetings to discuss practice overall or raise any issues that need to be addressed. This aligns with the findings for Smith, Latter and Blenkeinsopp (2014). The value of supervision has been as varied and positive as the value of colleague support. Results have highlighted that supervision is directly valuable in assisting the prescriber to incorporate new skills and moving successfully through the transition from student to practicing prescriber. Where results have highlighted negative experiences is where the supervisor has demonstrably less knowledge and/or experience than the professional they are supervising, and participants have expressed that this does not foster a strong working relationship, trust or the practitioner's self-confidence.

6.4.5 Continuous Professional Development

Findings from this study have confirmed the value that prescribers hold for CPD. There is variance in how accessible CPD is; some have stated they are in the position of having to seek and access CPD of their own volition, identifying external events they have to pay for. Others have regular access to CPD provided by their workplace. Importantly, findings in this study show that prescribers particularly value CPD that is subject specific to their own area of clinical practice. Green et al. (2009) noted that prescribing specific CPD was valued and wanted but not often provided. While general updates or subjects not of their own clinical area are interesting and have applicable principles, that is not the preferred approach, which agrees with previous findings from Green et al. (2009).

Participants stated that most had access to CPD. There are multiple examples of the variety of CPD accessed. This included formal CPD days with talks or workshops, either Trust organised or external, to taught sessions, presentations, departmental or hospital-wide events. Although there is a reported wide variance in the frequency of CPD, many participants had access to CPD regularly. It is interesting that, literature from 15 years and as recently as 4 years ago, report inadequate access to CPD (Courtenay, Carey & Burke, 2007; Herklots, Baileff & Latter, 2015; Barker-Bagley, 2019). However, many participants in this study were satisfied with the frequency and type of CPD they were able to access.

Prescribers in this study gave examples of how CPD has supported their practice, both in integration of prescribing skills into practice and expanding their scope of practice. In safety critical practice, prescribers are aware of the importance of staying up to date and this has been cited by participants as influential on their prescribing. Those who are actively prescribing hugely value CPD in keeping them up to date in their clinical and prescribing scope of practice and is viewed as an integral part of the structure of safe prescribing. While the findings around CPD in this study confirm what is already known in the literature, the important factor from this study is why CPD is valued, not just that it is. The newly qualified in Phase 2 of this study agreed that CPD was important to them to keep up to date and support safe prescribing, regardless of whether they had started prescribing yet or not.

6.4.6 Prescribing Errors

Some prescribers in Phase 2 talked about the fact that they have made errors as prescribers; this was also reported in Phase 1. In neither Phase of the study were respondents/participants asked what error they made, only if they had made a prescribing error and if they felt the post-error experience was supportive. However, some participants in Phase 2 chose to share what had happened. The majority in Phase 2 of this study who declared they have made errors that were spotted and corrected before the medication was administered so there was no patient harm. It is important to note that during the discussion of prescribing errors during interviews, the details of what happened afterwards in terms of how the incident was handled and reported were explored to confirm that appropriate and safe procedures were followed. These errors are still considered significant as learning points and understanding that there may be occasions when the error is not seen before drug administration. The concern about the potential of making errors was expressed, and some reported that the fear can be overwhelming or prevent prescribing. Not only did participants share their own views and experiences, but they also outlined incidents of other professionals in their workplace, highlighting the importance of awareness of and correct handling of errors. Some spoke of colleagues who refuse to prescribe as they are unwilling to take the risk because there are other more experienced prescribers already in place, or who do prescribe but are fearful and reluctant to prescribe autonomously, relying on having colleagues to hand to reassure them. The literature does not focus specifically on medication errors, but both Weglicki, Reynolds and Rivers (2015) and Maddox et al. (2016) reported that some prescribers were fearful of making mistakes and that the possibility of making errors was one factor in reluctance to prescribe.

These findings agree with the current literature that prescribers are fearful of making prescribing errors and of litigation (Gumber, Khoosal & Gajenasia, 2012; Herklots, Baileff & Latter, 2015; Maddox et al., 2016). Awareness of the risks and complexity involved in prescribing, even when outright fear is lessened, stays with new and experienced prescribers. This study has identified that in the vast majority of instances reported that prescribers used discussion and reflection after a prescribing error, and found the processes were supportive rather than punitive. However, some were still anxious to the extent their prescribing is self-restricted, or they do not prescribe at all, because they are reluctant to take the risk of making a mistake is an important finding. There are multiple reasons why fear or making errors outweighs willingness to prescribe or expand beyond a narrow scope of prescribing.

6.4.7 Organisational Systems

Results showed that some prescribers face delays of months between qualifying as a prescriber (that is, being annotated on their register) and being able to prescribe due to systematic processes not being ready. There were reports from participants that some clinicians are the first of their profession to qualify as prescribers in their Trust, and yet this was not anticipated, and as a result computer systems were unable to accommodate them on qualifying causing months of delay. While this was reported by Courtenay and Carey (2008); Downer and Shepherd (2012) and Courtenay, Carey and Stenner (2012) it was surprising to see this still reported by Stenner, van Even and Collen (2019). The interviews in this study took place three years after Stenner, van Even and Collen's (2019) study was published, and the delay due to IT systems not recognising their profession was reported by a physiotherapist and a dietitian. Although this was not

the experience of the majority of participants, it was also noted in Phase 1 that up to 30.4% waited between 2 months to a year after being annotated as a prescriber on their register to actually prescribing, confirming that a significant number of prescribers to face long delays. Although this study cannot confirm the reasons for this, there is a large proportion of prescribers subject to lengthy delay which can be detrimental to confidence.

Delays caused by IT systems was an issue reported by Courtenay, Carey and Burke (2006), albeit at a higher rate than shown in this study. Ross and Kettles (2012) cited similar organisational barriers – lack of a prescription pad or access to IT systems even though the Trusts are extremely likely to have employed nurse prescribers before, for example, physiotherapist or paramedic prescribers, so should be informed by their own experience that accommodating a new profession in prescribing requires some administration and IT adjustment. A decade after Ross and Kettles (2012) study, there are still organisations that have not anticipated the need to prepare the computer and prescribing systems. This is not an inconsequential matter, this study has participants who expressed frustration about delays to them starting to prescribe, stating it negatively affected their confidence. When a healthcare professional subsequently does not begin to prescribe at all or moves area, the finances and time invested in prescribing education is wasted or does not benefit the sponsoring organisation.

6.4.8 Competency Framework

The Competency Framework for all Prescribers (RPS, 2021) sets the standard of skills and knowledge for prescribing clinicians and there have been variations of these standards over the years. In 2012 the first framework that applied to all prescribing professions was introduced. Prescribers in this study gave a wide variety of responses through Phase 1 and Phase 2. The questionnaire and interviews took place only 2-3 years after inclusion of the *Competency Framework* (RPS, 2021) in prescriber education was mandated by the Nursing Midwifery Council (NMC, 2018a), GPhC and HCPC. This means that there was a high percentage of the sample in this study who were unaware of the *Competency Framework* as they qualified in or prior to 2018 and not all courses included the Framework in their curriculum. In the Phase 1 questionnaire, a few felt it was not relevant. Those responses were interesting, as the implication is that the respondents were aware of the Framework to hold the opinion it held no relevance to their practice. It is unclear if they felt the Framework is not relevant to their practice *at all*, or not relevant to their practice *day to day.* As none of the interview participants expressed the opinion the *Competency Framework* lacked relevance for them, it was not possible to explore that specific perspective more deeply. However, in Phase 1 and Phase 2, the results confirmed that some have not heard of it, some use it in appraisals, or to set and review professional goals in developing their scope of practice, or to reflect on their practice. Because no literature has yet addressed how clinicians use the *Competency Framework*, this study offers the first information on how the Framework is used by prescribers.

6.4.9 Confidence

The matter of confidence was addressed directly in the questionnaire and appeared as a thread throughout all the developed themes from the semi-structured interviews (without having a direct question about confidence). Although each of the themes speak in their own way about confidence, these have been pulled together in this final part of the discussion because it is important to understand the cyclical nature of the factors that can undermine or build confidence.

The confidence of newly qualified prescribers is vulnerable, and this was identified by Maddox et al. (2016). In this study, findings from both Phases show that factors that undermined confidence are lack of access to peer support and lack of access to meaningful supervision. These are both critical points and have been shown to restrict to a severely narrow scope of prescribing or prevent any prescribing activity at all. Dobel-Ober, Bradley and Brimblecombe (2013) had findings that showed – although there were other factors that supported prescribers – the confidence needed to prescribe was a strongly identified foundation. Earlier in this chapter, an important point was identified, that the transition from student to qualified and practicing prescriber is an important and daunting process for the prescriber themselves, but less visible for colleagues. This could be problematic for some who do not have support for their role and practice. This aligns with Ross and Kettles (2012) who identified that 40% of their sample were not prescribing due to lack of support, lack of supervision, and lack of communication from prescribing lead. On top of that, they identified lack of renumeration as a reason to not prescribe, something that has been identified in this study also. This study is in agreement with Bowskill, Timmons & James (2012) who

identified that low confidence was material in the reluctance to assume the responsibility of prescribing. Charter et al. (2019) identified that organisational systems that caused delays in a practitioner beginning to prescribe compounds loss of confidence post-qualifying. This was confirmed by participants in this study.

This study confirms the value of CPD and its role in keeping prescribers up to date and its contribution to safe prescribing. Further, prescribers worry about making errors and for some, the prospect is off-putting. Participants discussed their expectations of CPD and the positive effect it has in supporting their practice. They discussed the types of CPD they have access to and what works well for them. Importantly, those with little access to CPD find their confidence in their prescribing practice is adversely affected. Those who have not yet started prescribing explicitly want to have CPD in place to keep their knowledge up to date and feeling safe to begin to prescribe. This particular point is in agreement with Rowbotham et al. (2012) who's participants identified CPD as important to their self confidence and trust in their own competence.

Phase 1 detailed the number of years' experience clinicians had prior to undertaking the prescribing course. Two previous studies have looked at this and both concluded that those with more experience prior to prescribing the more confident the clinician (Courtenay, Carey & Stenner, 2012; Cope, Tully & Hall, 2020). However, the NMC (2018b) has reduced the requirement to have three years clinical experience prior to applying for the prescribing course down to one year. The justification is that additional elements have been built into undergraduate nurse education centred around drug administration, such as maths skills and some pharmacology. However, this raises the

question whether extra taught elements in undergraduate education is sufficient to replace two years clinical experience. Given the fact that there is an identified tendency for greater confidence in more experienced clinicians once they qualify as prescribers and that poor confidence can and does negatively impact prescribing practice, it remains to be seen if this reduced requirement will have any adverse consequences.

The use of supplementary prescribing, or rather, the restrictions it places, is very discouraging and participants in this study have reported how they have themselves not started prescribing or have found it extremely burdensome. As discussed in section 6.3.4, the particular limitations noted in relation to supplementary prescribing also have a negative impact on confidence and prescribing activity.

The importance of confidence should not be underestimated; this study shows a direct effect on prescribing practice, both positive and negative. This study has identified multiple factors that affect confidence, and how confidence – or lack of it – affects prescribing practice. This confirms studies from Hindi et al. (2016), Tatterton (2017) and Weglicki, Reynolds & Rivers (2015). Once confidence is damaged, it takes a lot of work to rebuild it. Findings from this study have identified multiple factors, some of which are unchanged from what is known form currently literature and identified some new perspectives. There are issues that are foreseeable, such as the need for IT systems to be able to accommodate the prescribers' professions, or the necessity of ordering prescription pads quickly, once they have qualified.

6.5 Limitations

There are limitations in this study that are acknowledged here. The low response rate to the Phase 1 questionnaire is a disadvantage as it means the results are not sufficient to be generalisable. The aim of the research was to include all prescribing professions throughout the research; however, this was partially met. Two midwives responded to the questionnaire, and both stated they would be willing to be interviewed and therefore provided their contact details. Neither one responded when invited to interview, or to the follow-up invitation. Although there was a possibility to have attempted to recruit midwives who had not responded to the questionnaire, it was decided that the fact the Phase 2 sample was entirely a subset of the Phase 1 sample was a strength and outweighed the disadvantage of not having midwives in Phase 2. Recruiting midwives who had not have been part of Phase 1 would have meant all professions were represented in Phase 2 but would not, perhaps, been sufficient to counteract weakening the sampling point of integration. Saturation generates a lot of debate in research literature about its nature and meaning and has been discussed in Chapter Three, section 3.21. In Phase 2, while saturation in terms of depth of analysis of the interviews is claimed in this study, data saturation is not claimed as it cannot be guaranteed that midwives would not have brought additional or different perspectives and experiences that are not in the results as they stand.

A decision was made by the researcher to keep the research question broad. This does give this study some limitations in being unable to focus even more deeply on the multiple aspects that were part of the investigation and highlighted in the findings. At

the same time, the decision was made so that there was the opportunity to find out and explore what issues were important to prescribers.

6.6   Use of Theoretical Framework

This study has used role theory as the theoretical framework as a structure. This has provided focus that helped answer the question and meet the set objectives. Identity theory related to the practice and experience of prescribers and that very much at the heart of the motivation for doing this study and the design and methods used. The self-perception that prescribers have of themselves, their own capability and the confidence they have to fulfil the role is affected by multiple factors. There is the relationship they have with the colleagues they work with, the permissions and restrictions of their workplace and the laws that govern prescribing in the UK. That also relates to their foundation profession and particular restrictions that may apply to them. These areas will be discussed as functions in group and organisation theory. At the centre of this are the individual prescribers themselves, how they identify themselves in their role and what their perceptions and experiences are of the relationships with colleagues and organisations. Fundamental to the identity role is the level of confidence they feel. This is a complex part of identity and has been shown in literature and in this study to be multi-factorial and confidence affects practice, and practice experiences affect confidence. For some, the role of prescriber has not been incorporated well – or at all – into their clinical role, and this has affected their confidence. Others' expectations of them as prescribers sometimes mis-match their personal expectations and level of confidence as newly qualified prescribers.

Social, or group, identity is an important part of role theory. The prescribers have an understanding of what is expected of their role and colleagues have their own expectations. A sense of belonging to a group, whether the group of their foundation profession, or group of qualified prescribers in their workplace, the expectations of self and from others can determine the behaviour – or expected behaviour – of individuals functioning in the role of prescriber. The assumptions that can be made about the role of those in particular groups can lead to some stereotyping about what a certain profession usually does and surprise that those boundaries can change – such as a diagnostic radiographer working on the wards, or a paramedic working in a GP surgery or A&E. This may also been seen where manager or colleague expectations of the prescriber may not match the prescriber's own expectations of level of confidence. Participants have spoken about managers expecting them to be fully confident on qualifying, and this is often not the case.

Organisation theory involves the function of the organisation and how it responds to external influences – such as the law – and internal influences, such as need for service provision creating a demand to sponsor clinicians through the prescribing course. Part of the function of organisation theory is problem solving (Cludts, 1999). Understanding the constraints and that are placed on both organisations and prescribers by the overseeing UK law is one aspect, as this enables the organisation to identify appropriate practitioners to sponsor through prescribing education, and what the boundaries are for each professional group in their prescribing role. The other aspect is the organisation itself can prepare for and support those who occupy prescribing roles. At the same time, the organisation does need to be aware of the differences in practice of prescribers of

different foundation professions and what their specific requirements are to fulfil their role.

6.7   Summary

This chapter has discussed the results from Phases 1 and 2 of this study, commenting on contributions to new knowledge and where these findings concur or contrast with the current body of literature. The use of the theoretical framework has been acknowledged in how it held the focus of this research.

Chapter Seven

Conclusion

7.1   Introduction

This chapter gives a summary of the study. The question, aim and objectives were set out in Chapter 2. The research question and objectives were finalised in Chapter 2, after the integrative literature review defined the gaps in current knowledge. The research question is, "What are the practices and experiences of prescribing practitioners in the United Kingdom?" The aim of this research is to understand the current practice and experience of prescribing practitioners in the UK, however long they have been qualified and will include those who are not actively prescribing.

The objectives set were:

1) To determine scale and scope of prescribing practitioners in the UK.

2) To understand how newly qualified practitioners begin their prescribing practice.

3) To understand how prescribing clinicians apply the national competency framework for prescribers.

4) To identify if reasons for not prescribing for all the prescribing professions.

5) To determine the influences on prescribers are the same for all the prescribing professions.

The methods and research tools used were designed with the objectives and aim in mind to effectively answer the question and detailed in Chapter 3. This was achieved through a mixed methods explanatory sequential design. Phase 2 was developed directly through the findings from Phase 1 and therefore specific objectives as this phase to keep it in line with the overall aim. Appropriate methodological approaches and standards

were used for the quantitative Phase 1 and qualitative Phase 2 and the findings are discussed together in Chapter 6.

The points of contribution to new knowledge are outlined and followed by recommendations for practice, education, and research. A final reflection from the researcher concludes this chapter and study, with a final summary.

7.2 Original Contribution

There is one specific point where this study has contributed new knowledge, the restrictive nature of supplementary prescribing by advanced clinical practitioners, and three other points that findings from this study that have added to under-researched areas and bringing a different perspective: newly qualified prescribers, those who have never prescribed and the necessity of colleague support and supervision in relation to prescribing. Other areas, as discussed in Chapter 6, have concurred with current literature.

7.2.1 Supplementary Prescribing and Advanced Clinical Practice

Those healthcare professionals who have supplementary prescribing rights only are restricted in practice in terms of the additional time, work and administration, as well as the necessary close involvement of a doctor willing to act as the independent prescriber. However, with relatively recent expansion of advanced clinical practice to include multiple professions working at that level and scope of practice, supplementary prescribing is increasingly difficult and cumbersome. In particular, findings from this

research have clearly highlighted that having supplementary prescribing only is problematic in the level of restriction it imposes. This affects allied health professionals – not nurses or pharmacists – and happens in one of two ways. First, an advanced clinical practitioner with just supplementary prescribing is dependent on a doctor to act as the independent prescriber and so bear part of the responsibility for prescriptions written from the CMP. When a healthcare professional, such as the participant who is a diagnostic radiographer but is working at an advanced level on the wards and no longer takes x-rays, supplementary prescribing becomes very restrictive in a role that otherwise demands responsiveness and flexibility. Second, the other situation is illustrated by paramedics who work in either primary care or, in particular, Accident and Emergency (A&E) departments, are currently unable to prescribe controlled drugs as independent prescribers. This puts them in the situation where they are able to assess and have the knowledge to make prescribing decisions for those patients who need therapeutic controlled drugs for pain management, but legally unable to prescribe them. Another independent prescriber (nurse or pharmacist) or a doctor has to write the prescription, and to do that they must be satisfied the assessment and prescribing decision is correct. The environment of A&E is not suitable for the use of CMPs as they are designed to manage patients with long term conditions that will be overseen by the same healthcare professional. Urgent, single attendance episodes are not suitable.

Advanced Clinical Practice has broadened the clinical horizons for many healthcare professionals and taken them outside their traditional work environments. The scope and legal permissions of prescribing have not changed. This is particularly interesting for paramedics for two reasons. First, they gained prescribing rights in 2018. After years of

debate and work, they are the only profession to date who have entered the prescribing arena straight to independent prescribing, bypassing the years of having only supplementary prescribing that all other professions have experienced. Second, only paramedics who can demonstrate they are working in advanced practice roles are eligible to prescribing courses. In granting their legal right to be independent prescribers in 2018, that might have been an opportune time to amend the Misuse of Drugs regulations to give them full prescribing rights.

7.2.2 Newly Qualified Prescribers

There is relatively little focus on the experience and practice of newly qualified prescribers. While they do feature in other research, it is usually acknowledging that they are newly qualified without further exploration; one paper only has specifically focussed on the newly qualified nurses, and one on newly qualified paramedics. What this research has added is an understanding of the vulnerability of newly qualified prescribers. While previous literature has pointed out that self-confidence is not high at that time, and colleague support is seen as necessary by the prescribers, this research has highlighted that there may be a mismatch in expectations between managers and the prescribers themselves and has noted that there is a shortfall in the level of support needed and that actually available.

7.2.3 Never Prescribed

There is a significant but not completely known level of wastage in terms of those who qualify but never prescribed. While some literature refers to this, some discuss

participants in terms of 'not currently prescribing' without differentiating between those who have never prescribed and those who have prescribed but stopped and no longer prescribe. This research has highlighted that point. This is significant because it potentially relates back to the vulnerability of the newly qualified prescriber. It is not known if different support is needed for those who have never prescribed, or if they are less confident than those who have stopped prescribing.

7.2.4 Colleague Support and Supervision

The matter and importance of support from colleagues and formal supervision has indeed been presented in the current body of literature, and while this study's findings concur, it adds a demonstration of what the direct effect is on a healthcare professional's prescribing practice when they flourish with support that they describe in detail, and in contrast, when they have never had the support of a multi-disciplinary team or a manager that understands the role, giving weight to the "why" peer and manager support is necessary and what that support can look like when successful.

7.3   Implications for Education, Practice and Research

7.3.1 Implications for Higher Education Institutes

Higher education institutes can work with clinical practice partners to help newly qualified prescribers transition to practicing prescribers. This can be considered for all prescribers, and particular attention paid to some aspects for supplementary prescribers. This could be done with the HEI communicating with the DPP – which is already a requirement by standards set by regulatory bodies – during the course. In this

way, it won't be a large additional time-expensive or workload for the HEI staff but streamlined with the existing commitment to communication between HEI and practice partners. It has the potential to make a significant difference to the experience of the prescriber and efficacy of the service provided. While supplementary prescribing of itself is more work, more administration, and requires the close involvement of a doctor willing to act as independent prescriber, this is additional reason to be prepared and to start that preparation prior to the end of the prescribing course.

7.3.2 Implications for Practice

Given the importance of sufficient support for prescribers, whether newly qualified or very experienced, coupled with the fact that close to 50% of prescribers say they do not have the level of support to meet their needs, there is an opportunity here to address that deficit. Colleague support and supervision has multiple forms. Knowledge sharing between peers can be structured or informal and is valued either way. Between peers, it can also encourage the prescriber to share their knowledge too, which in turn can inform their own increasing scope of practice and confidence. Supervision also takes different forms, including annual appraisal (which could include specific focus on prescribing practice), audit of prescribing practice and patterns, one to one meetings, group meetings. Regularity and structure are valued. While it is undeniable the NHS is working under the strain of lack of resources and chronic understaffing, appropriate levels and forms of supervision and support can be negotiated according to need and available resources. Planning for this can start before the end of the prescribing course to work out what will be effective and realistically achievable.

In the same way, considering the current IT systems and if there needs to be any updates, or what processes need to be undergone to obtain prescription pads where electronic prescribing is not yet in place, or is a necessary addition to electronic prescribing for those who work in the community or urgent care centres, for example, can be done prior to the point the prescriber has qualified. Even if this is done on receipt of the prescribers' results, it makes use of the time in waiting for the HEI to ratify the results and, after that, the time taken to annotate the qualification on the professional register. This work needs to be done but undertaking it at an earlier point can prevent significant delays that undermine the prescriber, their self-confidence and sometimes their practice.

7.3.3 Implications for Research

The research question was a deliberately broad focus and, as a consequence, has produced findings that are worthy of more specific research.

This study has highlighted the problems of using supplementary prescribing in advanced clinical practice roles. Research into the experience, barriers and facilitators of supplementary prescribers working as advanced clinical practitioners is needed to understand this phenomenon in greater depth. It is apparent, through this research, that this is an area that needs further investigation due to the restrictive nature of supplementary prescribing, especially for allied health professionals working within the ACP role.

This research has highlighted the fact that there is very little known specifically about newly qualified prescribers and their experiences and there is scope for more focused research into prescribers within their first year after qualifying. The motivation for such a study would be to understand and better manage the transition from student to practicing prescriber, to avoid some of the factors that discourage prescribers and capitalise on the factors that facilitate them.

In a perhaps related topic, but worth conducting with a specific focus, is research to understand the experiences of those who qualify and never prescribe and what their reasons are. The level of waste reported in the literature varies a lot, but it is clear that the level is not trivial. A lot of time and money are spent on prescriber education and if the qualification is not used, the investment is lost. Reasons given by those in this study who have either a very narrow scope when they prescribe, or have not prescribed yet, include lack of confidence, change of clinical role, lack of need to prescribe, lack of colleague or managerial support, or lack of renumeration. However, it must be remembered that those participants in Phase 2 who had not prescribed were all intending or wanting to. Whether the same can be said for prescribers who have never prescribed and do not intend to, is not known. Further, it is recommended to consider that there may be differences between those who have never prescribed and those who have prescribed, but stopped and are not currently prescribing. It is possible that there is a difference in the needs of those two groups in terms of supporting them toward using their qualification; that is as yet unknown.

Finally, another area for research arises from the fact that the NMC (2018b) has reduced the requirement to have three years' clinical experience prior to applying for the prescribing course down to one year. The justification is that additional elements have been built into undergraduate nurse education centred around drug administration, such as maths skills and some pharmacology. This raises the question whether extra taught elements in undergraduate education is sufficient to replace two years' clinical experience. The literature has identified that there is an identified tendency for greater confidence in more experienced clinicians once they qualify as prescribers (Courtenay & Carey, 2008; Courtenay, Carey & Stenner, 2012; Herklots, Baileff & Latter, 2015) and that poor confidence can and does negatively impact prescribing practice; it remains to be seen if this reduced requirement will have any adverse consequences. Although the findings in this study were unable to demonstrate a correlation between length on clinical experience prior to prescribing, and prescriber confidence, the findings from the literature review and change in NMC (2018b) requirements justifies the recommendation for further research to understand the relationship between length of clinical experience prior to prescribing, confidence of prescribers and what effect this relationship may have.

7.4 Reflections from the researcher

I am a situated novice researcher, and this was instrumental in choosing my area of study. My decision to keep my question broad was a deliberate and considered one. The idea started with a narrower focus on the newly qualified prescriber, but attendant ideas and possibilities made me question that and I finally decided to take this opportunity to

take a broader view of what is happening in the world of UK prescribing. I wonder if this work would have been 'easier' had I chosen a singular focus, but I am certain I would have been left wondering what opportunities and knowledge I would have missed. There have been challenges all through the process. My interest in philosophy in no way made it easier to grapple with the different assumptions and reconcile them into my own stance.

Developing my questionnaire was more difficult than I had anticipated, even though I understood the principles of what I was supposed to be doing. That really showed me the struggle between having good theoretical knowledge and how it should manifest, and actually applying it in practice. The theory-practice gap became very real for me.

Once I got through ethics, the excitement of data collection was suddenly a reality. I felt gratitude to every single individual who answered my questionnaire – including the three I had to remove spent a little of their time on this. I was elated to see so many people volunteer to participate in Phase 2. My enthusiasm had to be tempered as the number of people I initially planned to interview was unrealistic. I cut it in half and was counselled to remove a third of what I had proposed. This was, of course, good advice and the richness of data is a testimony to that. After this, the opportunity to work at separate stages with two senior qualitative researchers was a valuable opportunity that was both instructive and validating.

My questionnaire respondents and interview participants gave me so much to think about. I knew I would not anticipate all the findings; some were certainly less predictable

than others. As a situated novice researcher, I worked hard to find the balance between my own knowledge and experience helping me see what is important and worth investigating and exploring more deeply, and not permitting my own experiences to blinker me to experiences that did not align to mine.

This has been a process of challenge, learning, frustration, elation and new knowledge for me personally, as a novice researcher. This began from the moment I had the idea, to the point of me writing the final words in this last chapter.

7.5   Summary

This chapter has presented a brief overview of this study. The contribution to new knowledge has been presented. Recommendations for education, practice and research have been made, based on the findings. The reflections of the researcher have been given in first person, as appropriate for a situated researcher.

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Appendix 1 – Clinical Management Plans

TEMPLATE CMP 1 (Blank): for teams that have full co-terminus access to patient records

Name of Patient:	Patient medication sensitivities/allergies:
Patient identification e.g. ID number, date of birth, NHS number:	
Independent Prescriber(s):	**Supplementary Prescriber(s)**
Condition(s) to be treated	**Aim of treatment**

Medicines that may be prescribed by SP:

Preparation	Indication	Dose schedule	Specific indications for referral back to the IP
		.	.

Guidelines or protocols supporting Clinical Management Plan:

Frequency of review and monitoring by:

Supplementary prescriber	Supplementary prescriber and independent prescriber

Process for reporting ADRs:

Shared record to be used by IP and SP:

Agreed by independent prescriber(s)	Date	Agreed by supplementary prescriber(s)	Date	Date agreed with patient/carer

TEMPLATE CMP 2 (Blank): for teams where the SP does not have co-terminus access to the medical record

Name of Patient:	Patient medication sensitivities/allergies:
Patient identification e.g. ID number, date of birth:	
Current medication:	Medical history:
Independent Prescriber(s): Contact details: [tel/email/address]	Supplementary prescriber(s): Contact details: [tel/email/address]
Condition(s) to be treated:	Aim of treatment:

Medicines that may be prescribed by SP:

Preparation	Indication	Dose schedule	Specific indications for referral back to the IP

Guidelines or protocols supporting Clinical Management Plan:

Frequency of review and monitoring by:

Supplementary prescriber	Supplementary prescriber and independent prescriber

Process for reporting ADRs:

Shared record to be used by IP and SP:

.

Agreed by independent prescriber(s):	Date	Agreed by supplementary prescriber(s):	Date	Date agreed with patient/carer

Appendix 2 – Prisma Flow Diagram

Identification	**Records identified through database searching** (n = 261) **Additional records identified through other sources** (n = 15)

Duplicates (n = 20), outside UK (n = 55) and not related to prescribing (n = 108) removed

Records remaining (n = 93)

Records screened (n = 93)

Records excluded on review of abstract (n = 30)

Full-text articles assessed for eligibility (n = 63)

Full-text articles excluded, with reasons:

Conference abstract (n = 2)

Outside UK (n = 2)

Not NMPs (n = 1)

Students (n = 1)

Research not meeting set parameters of "prescribing practice."

(n = 20)

Research not meeting CASP

(n = 5)

Studies included in Literature review (n = 32)

.

Appendix 3 – Data Extraction

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
Courtenay, Carey & Burke 2006 UK	Independent extended and supplementary nurse prescribing practice in the UK: A national questionnaire survey	Sample frame: extended IP and SPs in UK Sample: Convenience from database. Nurses, *n*868	QT Survey. All but one closed.	87% used IP 35% used SP 32% no CPD	Restricted by poor computer systems in primary care and lack of CPD. Principally in primary care. Unmet CPD needs.	Confidence
Courtenay & Carey, 2008 UK	Nurse independent prescribing and nurse supplementary prescribing practice: national survey	Nurses, *n*1377	QT Survey 1 QL question: Problems implementing CMP, please specify.	891 in primary care 333 in secondary care 1107 used IP 568 used SP	Restricted by lack of support, inability to prescribe on computer systems, difficulty in generating CMP, doctor / pharmacist objection.	Professional relationships Organisational Influences

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
				Experience before prescribing influential in confidence.		Confidence
Green, Westwood, Smith, Peniston-Bird & Holloway, 2009 England	Provision of continued professional development for non-medical prescribers within a South of England Strategic Health Authority: a report on a training needs analysis	Sample frame: N1249 prescribers, V100/V200/V300 Sample: Nurses, Health Visitors and Pharmacists (*n*1) *n*270 V100 – 72% V200 – 13% V300 – 22%	MM QT & QL postal questionnaire to NMPs Closed questions. Open Q (other – specify and 4 x short, please explain). Consecutive or sequential? QL Interviews with stakeholders	Results from each phase separate. Enhances professional role. CPD – 70% had no further study. for further qualification. 30%, Masters, Bachelor's or PGCert or PGDip. Wider CPD activities specific to clinical area. 83% mandatory study days. Subject specific conferences popular. • Patient assessment • NMP • Support for new NMPs	Short courses most popular Training gaps identified. Appropriateness of education – 14% said too generic. Concern about integration into practice and level of confidence.	CPD

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
				• Decision making skills		
Daughtry & Hayter, 2010. England.	A qualitative study of practice nurses' prescribing experiences.	Sample frame = N? Sample = *n*8 Practice nurses *n*3. Nurse practitioners *n*4. Nurse manager *n*1. Qualified between 7m and 5y.	QL Purposive sampling from on Trust. Eight 1:1 semi-structured telephone interview. Funnel approach.	• Others' expectations • Transforming roles • Feelings of responsibility • Positive impact of prescribing and • Negative impact of prescribing	Overall positive. • Tensions in doctor-nurse relationships. Expect too much. Most GPs supportive. GPs delegate. • Increased scope • Checking everything. • Holistic care • Increased workload – perception GPs offload onto them	Professional relationships
Downer & Shepherd 2010 Scotland	District nurse prescribing as nurse independent prescribers	District nurses *n*8.	QL - Heideggerian phenomenology	• Lack of access to computers • Cumbersome record keeping	Further research around experiences of community nurse prescribers. National perspective recommended.	Organisational Influences

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
				• Benefits vs barriers		
Latter, Blenkinsopp, Smith, Chapman, Tinelli, Gerard, Little, Celino, Granby, Nicholls & Dorer, 2011 England	Evaluation of nurse and pharmacist independent prescribing	Nurse and pharmacist IP & SPs Sample frame = Nurses *n*1462 Pharms *n*358 Sample = Nurses *n*946 Pharms *n*208	QT - National Questionnaire Case record analysis Multi-stakeholder workshop	• 93% nurses and 90% pharms have prescribed. • 86% nurses, 71% pharms currently prescribing. • 2-3% of workforce • Mostly in primary care • Practitioner driven • Half Trusts no strategy	Examine NIPs/PIPs drug choices in relation to guidelines Analysis of communication skills Analysis of monitoring systems Analysis of case load, support, supervision, CPD Compare with doctors	Not prescribing
McCann, Haughey, Parsons, Lloyd, Crealey, Gormley & Hughes	Pharmacist prescribing in Northern Ireland: a quantitative assessment	Sample frame: Pharms *n*105 Initial response *n*100 Sample: *n*76	QT self admin questionnaire, included a few free text questions.	47.4% currently prescribing. 46% never prescribed.	High number never used qualification. Recognised barriers.	Not prescribing

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
2011 Northern Ireland				Px-ers: Hyperlipidaemia, hypertension, CVS & diab, anticoag. Non-Px-ers: resp, hypertension, haem and pain management. Barriers: inadequate resources, funding, onerous paperwork in SP, other HCPs Benefits to pt care and perception in the team. Benefits vs barriers	Low confidence as diagnosticians.	
Bowskill, Timmons & James 2012	How do nurse prescribers integrate prescribing in practice: case studies in	Nurses *n*26 Primary and secondary care	QL Semi-structured interviews	• Prescribing in practice • Prescribing for patients • Prescribing as needed	Integration into practice: • 21 / 26 prescribing. Moved to non-clinical role (but NMP informed new role). New clinical but non-prescribing roles. Software problems. Lack	Not prescribing.

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
	primary and secondary care			• Prescribing agreements • Prescribing relationship	of confidence to handwrite scripts. Not prepared to take the responsibility. Employer required SP first. • Self-restricted personal formulary. • Rather than self-restrict. Start with known and stable patients. • Agreement of scope with GPs / employers. • Mixed colleague responses. Nurses often unsupportive.	
Courtenay, Carey & Stenner,	An overview of non-medical prescribing across one	883 participants.	QT - Descriptive questionnaire survey	578 are IP but use only SP: Trust policy, personal preference, CD	Other influences +ve and -ve: experience prior to becoming NMP, employer, governance procedures, support for role.	Organisational Influences

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
2012 UK	strategic health authority: a questionnaire survey.	Nurses *n*590 Pharmacists *n*35 AHPs *n*8 (Professions given – physio, podiatrist, radiographer - but breakdown of numbers not given) Optometrist *n*1		restrictions (before law amended). 58 use IP & SP 39 are SP only 133 not currently prescribing: 56 N.IP/SP, community, P IP/SP and 3 AHP and 1 optometrist = role change, procedural delay, formulary restrictions, Trust policy, lack of support, lack of CPD, lack of confidence.	Need robust governance and support from organisation. Governance systems for 90%, 37% access to prescribing data. Community nurses worse off.	Confidence Newly qualified. Not prescribing.
Gumber, Khoosal &	Non-medical prescribing:	MH nurses *n*18 and pharmacists *n*2	QT Likert scale questionnaire informed by UK	Compliance with national standards high	Adhere to standards: Shortfall in supervision.	Professional Relationships

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
Gajebasia, 2012 England	audit, practice and views		DoH Standards (1989)	Views – positive with some indecision • Experiences – Most confident, most fearful of litigation.	• 20% (10% certain plus 10% undecided) prefer to leave prescribing to doctors. • 70% confident to prescribe	
McCann, Lloyd, Parsons, Gormley, Haughey, Crealy and Hughes, 2012. Northern Ireland	"They come with multiple morbidities": a qualitative assessment of pharmacist prescribing.	Sample frame = n76 Pharmacists n11 Doctors n11 Stakeholders n13	QL findings of larger explanatory sequential MM	• Effect on patient care • Challenges • Importance of inter-professional team	• Holistic approach. Extra time needed. • Territorial issues. Strongly important to work in scope of practice. Increased complexity. • Team communication supported pharmacist prescribers. Divided if doctors or pharmacists better for long term conditions (LTC). Safety due to stepwise approach.	Professional relationships Confidence

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
Ross & Kettles, 2012. Scotland.	Mental health nurse independent prescribing: what are nurse prescribers' views of the barriers to implementation?	Q: MH nurses *n*33 FG: MH nurses *n*12 MH nurses	MM explanatory sequential. Questionnaire – focus group. Questionnaire	Barriers. • Concern of Px on therapeutic relationship • Role conflict • Lack of support esp in community	60% not prescribing at all.	Professional relationships Not prescribing
Rowbotham, Chisholm, Moschogianis, Chew-Graham, Cordingley, Wearden & Peters, 2012 England	Challenges to nurse prescribers of a no-antibiotic prescribing strategy for managing self-limiting respiratory tract infections	Nurses *n*31 Others *n*2 (physio and pharmacist)	QL two phases – emerging themes (multi-method) Semi-structured interviews and three focus groups.	Challenges – cautious, especially in diagnostic uncertainty. Frustration when GP gave antibiotics when not indicated. Strategies – education, decision making, managing patients' concerns.	Need focus in training to build confidence and skills in self-limiting respiratory conditions without recourse to antibiotics.	Confidence

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
Scrafton, McKinnon & Kane 2012 England	Exploring nurses' experiences of prescribing in secondary care: informing future education and practice.	Nurses *n*6. Min 12 months on register. Not stated range.	QL Phenomenological cross-sectional study; interviews.	• Motivation to become IP • Benefits vs limitations of education and CPD Prescribing in Practice. • At the time limited to NPF (not stated why) • Barriers to NMP vs benefits of NMP	• Improve practice / time management and continuity. • Good on accountability. Good mentorship. Not if poor relationship with mentor. Haphazard CPD. NMC not giving structure. 3 prescribe regularly. 1 had prescribed once in emergency, 2 had never prescribed. 2 of the 3 prescribers used SP. 1 was using IP but limited to NPF and had to supplement with PGD. Barriers – limitations frustrating. Commitment to scope and safety.	Organisational influences
Wilson, Gerber, Mahoney & Odell	An audit of independent nurse prescribing in a critical care outreach team	Nurses *n*2.	QT Audit (based on three data collection times)	• Number of referrals to service	• Range and complexity of prescribing • Positive impact on service	Confidence

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
2012 England				• Drug categories prescribed • Shifts worked	• Balance with increased referrals / workload could negatively impact service	
Dobel-Ober, Bradley & Brimblecombe 2013. England.	An evaluation of team and individual formularies to support independent prescribing in mental health care.	MH Nurses, *n*20 – in group to discuss formulary. *n*10 interviewed @ 1 month *n*14 interviewed @ 6 months (active prescribers only)	QL Service evaluation of Trust project to implement individual and team formularies for MHN.	RESULTS: Before formulary = BF 6 months after = 6m 12 months after = 12m Non-prescribing: BF = 8; 6m = 4; 12m = 1 SP: BF = 3; 6m = 0, 12m = 0 IP: BF = 9; 6m = 16; 19 = 19. Barriers to NMP vs benefits of NMP	• Clarity from formulary • Safe transition SP to IP • Confidence • Supported shared decision making • A few drugs omitted from formulary • Not enough on its own – team support needed. • Useful tool, clear boundaries.	Organisational influences Confidence
Brodie, Donaldson & Watt,	Non-medical prescribers and benzodiazepines:	Nurses *n*4 Pharmacists *n*4	QL	Prescribing in general and benzodiazepines in particular.	• NMP critical to development. No direct	Professional relationships

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
2014 Scotland	a qualitative study	(Community, general practice, mental health).	Semi-structured interview	• NMP particular brand of prescriber • Dialogue round prescribing is critical.	opposition but changing roles. • Consultation skills to improve concordance. • MH management in other conditions. Additional time needed to support prescribing. Electronic systems can be a barrier – lack of structure / communication. Ongoing CPD wanted.	CPD
Drennan, Grant and Harris, 2014. England.	Trends over time in prescribing by English primary care nurses: a secondary analysis of a national prescription database.	Nurses.	QT Retrospective data analysis 2006-2010 of national primary care prescription database (ePACT) and NHS	In 2010 15, 841 nurses prescribing, which is 43% of those qualified to.	Low volume of nurse prescribing compared to doctors. Hypothesised not prescribing due to lack of support.	Not prescribing.

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
			workforce database.			
Smith, Latter & Blenkinsopp, 2014 England	Safety and quality of nurse independent prescribing: a national survey of experiences of education, continuing professional development clinical governance.	Nurse IPs *n*840 NMP leads *n*87	Cross sectional National survey.	• 78% good access to CPD • CPD multiple ways and uses • Support and appraisal • CPD and decision support	Education satisfactory, fit for purpose. Processes to monitor quality and safety in place and reassuring. Some Trusts lacked policies / strategies. • 77% felt support good, with appraisal and access. Community nurses and HVs less access to support, 52% appraisal, 69% access to experienced prescriber.	Professional relationships CPD Not prescribing
Herklots, Baileff & Latter, 2015.	Community matrons' experience as	Community matrons *n*7 (nurses), all IPs.	QL	• Importance of knowledge.	• Underpinning knowledge gives confidence. Some rated higher than ability to prescribe.	Professional relationships

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
England.	independent prescribers.		Semi-structured interview.	- Prescribing Practice. - Fear of error Support - All have CPD with Trust but difficult to access (time).	- Frequency varies. Limited scope. Not expanding. Barriers – GP lack of confidence. GP good relationships. - Adequate support but unstructured. CPD difficult to access. GP support. More support needed.	CPD Confidence
Weglicki, Reynolds & Rivers, 2015 England	Continuing professional development needs of nursing and allied health professionals with responsibility for prescribing.	AHP *n*16 Nurses *n*11 Physios *n*3 Pharmacist *n*1 Pharmacy technician *n*1 Primary care	QL phenomenology Semi-structured interviews	- Personal anxiety - External barriers - Need for support	- Concern about keeping up to date, not remembering what were taught, fear of incompetence / error. - Poor communication between secondary and primary care. - Valued clinical supervision and supportive peer group.	Confidence CPD

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
GPhC 2016 Great Britain (England, Scotland and Wales).	Prescribers Survey Report	*n*651	MM online survey	Themes: The prescriber, professional engagement, the environment and opportunities. • Difficult professional relationships a barrier. Explored clinical areas, opportunities to train.	• Overall satisfaction from those who have qualified. • Need to explore reasons for lack of confidence.	Professional Relationships Newly Qualified
Maddox, Halsall, Hall & Tully, 2016 England	Factors influencing nurse and pharmacist willingness to take or not take responsibility for non-medical prescribing.	Nurses *n*15 Pharmacists *n*5 Nurses *n*10	QL Interview Focus Groups (3)	• 52 critical incidents (40 from nurses, 12 from pharmacists) in which reluctant to accept responsibility to prescribe	• Influencing factors: own perceptions of competency, (diminished with lack of support) role, risk. Delayed prescribing, referred to doctor.	Confidence

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
				• Cautiousness – professional consequences / reprimands. Fear of error. Perceptions of differences between them and doctors. Negativity from doctors. Loss of confidence just after course ends.		
Courtenay, M.; Khanfer, R.; Harries-Huntly, G.; Deslandes, R.; Gillespie, D.; Hodson, G.; Pritchard, A. and Williams, E.	Overview of the uptake and implementation of non-medical prescribing in Wales: a national survey	Nurses *n*32 Pharmacists *n*46 Physiotherapists *n*4 Podiatrist *n*1 Radiographers *n*2 Other *n*2	QT survey	• Prescribing data not available to all • 91.5% have supportive colleagues • 17.7% lacked employer support • Barriers = lack of support; change of role; lack of prescription pad;	• Need to explore reasons for lack of NMP in primary care • Inconsistent uptake across Wales	Newly Qualified

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
2017 Wales				legislation around CDs; local formularies.		
<mark>Nimmo, Paterson & Irvine, 2017 Scotland</mark>	CPD needs of opioid nurse prescribers: A survey	Nurses *n*68	QT Survey	• 37 had prescribed opioids • 64 wanted CPD. Face to face preferred	CPD required. One comment on use competency framework to support CPD.	CPD
Tatterton 2017 England	Independent non-medical prescribing in children's hospices in the UK: a practice snapshot	Nurses *n*68	QT Internet questionnaire	20 / 55 hospices 14 had NMPs (*n*39) 16 NMPs responded 8 to continue, 8 to initiate Barriers to NMP vs benefits of NMP	Benefits acknowledged Barriers: lack of opportunity to develop, time. Highest reported = confidence,	Confidence
Courtenay, Deslandes, Harries-Huntley,	Classic e-Delphi survey to provide national consensus and establish	Round 1: 42/55 Round 2: 40/42 Round 3: 34/40	e-Delphi survey	9 critical factors 5 actions	• Supervision • CPD • Pt satisfaction	Organisational influences

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
Hodson & Morris 2018 UK	priorities with regards to the factors that promote the implementation and continued development of non-medical prescribing within health services in Wales			High agreement that organisational and structural readiness important to support prescribing.	- Interprofessional relationships - Need for NMP - Management and peer support - Understand role - Structures and processes in place - Recognise value to service	CPD
Barker-Begley 2019 England	Exploring the educational and support needs of nurse non-medical prescribers working withing HIV care	2015 Nurses *n*22 2017 Nurses *n*29	QT Questionnaire	Improved job satisfaction, 9.3% and 15.7% felt skills not used well. Personal, financial and time. Delays. Personal formulary. Lack of support from doctors. Barriers to NMP vs benefits of NMP	Fewer experienced barriers in 2017 2017 - 5 had never had CPD (?how long qualified Table 3 lacking)	Professional relationships

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
Chater, Williams and Courtenay, 2019. England	The Prescribing needs of community practitioner nurse prescribers: A qualitative investigation using the theoretical domains framework and COM-B	20 community prescribers of whom 2 have V300. (Health Visitors *n*6; District Nurses *n*7; Community children's Nurse *n*1; Tissue viability nurse *n*1; Clinical lead nurse *n*3; Wound care specialist *n*1; Community senior sister *n*1)	QL Semi-structured telephone interview.	• Knowledge & experience • Consultation & communication skills • Prof. confidence & identity • NHS vs patient cost • Time allocation • Formulary access Supporting environment for pt-centred care	Ongoing need for support ongoing 'capability'. Increased opportunity. Lack of confidence on qualifying, exacerbated by delays in getting prescribing rights / pads in Trust.	Newly qualified
Hindi, A.M.K., Seston, E., Bell, D. Steinke, D. Willis, S. and	Independent prescribing in primary care: A survey of patients',	Nurses *n*14; Pharmacists *n*4; Podiatrist *n*1; unknown *n*1.	MM questionnaire	Facilitators • Competence and confidence • Colleague support	Recommended perspective of wider range of IPs	Professional relationships

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
Schafheutle, E.I. 2019 England	prescribers' and colleagues' perceptions and experiences			• Teamwork / communication • Managing workload • Rapport with pts Barriers • Lack of competence • Inadequate training • Inadequate CPD • Organisational, workload Lack of others awareness		
Stenner, van Even & Collen 2019 UK	Early adopters of paramedic prescribing: a qualitative study	Paramedics *n*17 (6 prescribing, 11 waiting annotation)	Telephone / video interviews	Primary care, ED, UCC, WIC, rapid response. Barriers to NMP vs benefits of NMP	Benefits: Streamlining care, added to advanced role, supported. Challenges: Admin / IT issues. No CDs, colleague/pt expectations	Professional relationships Newly Qualified Organisational influences

Authors Year Location	Title / Question	Participants	Method	Results	Conclusion	Lit. Rev. Theme
Cope, L.C., Tully, M.P. and Hall, J. 2020 UK	An exploration of the perceptions of non-medical prescribers, regarding their self-efficacy when prescribing, and their willingness to take responsibility for prescribing decisions	Nurses *n*36; Pharmacists *n*27; Physiotherapists *n*4 unknown *n*32.	Cross sectional descriptive survey MM	Longer qualified profession and NMP = greater self-efficacy Shared / full responsibility	Related themes Call for research that looks more at influences.	Confidence

Appendix 4 – Freedom of Information Requests

To **Health and Care Professions Council**

Good afternoon,

please may I make the following request:

1) Number of dietitian supplementary prescribers
2) Number of paramedic independent prescribers
3) Total number of physiotherapist prescribers and how many of those have independent prescribing status
4) Total number of podiatrist prescribers and how many of those have independent prescribing status
5) Number of diagnostic radiographer supplementary prescribers
6) Number of therapeutic radiographer prescribers

Many thanks for your help,
kind regards,

Bernadette Rae

To **General Pharmaceutical Council**

Good afternoon,

please can I request the total number of pharmacists annotated as prescribers, and how many of those (if any) are supplementary prescribers only?

Many thanks,

Bernadette Rae

To **Nursing & Midwifery Council**

Hello,

May I make a freedom of information request the following information, please:

1) Total number of nurse independent/supplementary prescribers (V300)

2) Total number of midwife independent/supplementary prescribers (V300)

3) Total number of community V150 prescribers

4) Total number of community V100 prescribers

Many thanks,

Bernadette Rae

Appendix 5 – Questionnaire Respondents Information Sheet

Study title: A mixed-method investigation of the practice of independent supplementary and community prescribers in the United Kingdom

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

The purpose of the study:

I am a PhD student at London South Bank University, and I am investigating the practice and experience of independent, supplementary and community prescribers in the UK. There are now more professions than ever who are eligible to undergo the education as an independent, supplementary or community prescriber. I would like to invite you to participate in this research study by completing a short questionnaire, which will take between 10-15 minutes of your time.

Why you have been asked to participate:

You are invited to take part if you are annotated on the professional register of NMC, HCPC or GPhC as an independent, supplementary (V300) or a community prescriber (V100 / V150). This invitation is open to all qualified prescribers, including anyone who has qualified but never prescribed.

The voluntary nature of participation:

It is your choice whether or not you take part. If you do decide to take part you will be asked to read the next page to give consent. You are still free to withdraw and without giving a reason. You can simply log out of the questionnaire without completing it. However, it will not be possible to withdraw after submitting the survey.

What will happen if you take part?

Phase one of the research is this survey. At the end of this survey is a question to ask if you would be willing to participate in phase two, which is a one-to-one interview. This can take place in person, on the phone or via a platform such as Microsoft Teams. Specific information will be provided if you choose to take part. You are free to participate in phase one only, phase one and two, or not at all. You will only be contacted to participate in phase two if you give your permission and your preferred method of contact.

Possible disadvantages/risks to participation

This study is not intended to cause any harm. However, if any questions in this survey cause you any discomfort or distress, it is important to use the available support. You can access free services through NHS counselling services, https://www.england.nhs.uk/mental-health/adults/iapt/ or through your occupational health department.

Possible benefits to participation

You will not benefit directly or personally, but you will be making a valuable contribution to understanding the practice and experience of prescribers in the United Kingdom. This will be informative for employers and prescribers in understanding the experience of prescribers of different professions.

Outline data collection and confidentiality

All the information collected about you and other participants will be kept strictly confidential (subject to legal limitations). Data generated by the study will be retained in accordance with the University's Code of Practice. Digital recordings and records will be stored on a LSBU password protected server accessible only by the research team. Fully anonymised research data is stored in compliance with the LSBU data protection policy and the Data Protection Act (2018). All data will be stored securely for five years after the research has been completed. Data will be stored in the university secure cloud server.

Non-anonymised data (personal data) data will be stored for exactly as long as it is needed in compliance with the General Data Protection Regulations. All personal data will be kept for a period of 5 years after the completion of the project or until the end of the project and then destroyed. No information regarding your participation in the study will be shared outside the research team.

In the write up of the study all data will be completely anonymised. No names or any identifiable information will be included.

What will happen to the results of the research study on completion?

On completion of this research, it will be submitted as part-fulfilment of a PhD. The results will be disseminated by publication in peer reviewed journals and conference presentations.

Who is organising and funding the research?

This research is being conducted as I am a student at London South Bank University. I am also a member of staff at London South Bank University. I am conducting this research as a PhD student of Health Care in the School of Health and Social Care of London South Bank University.

Who has reviewed the study?

This research has been reviewed and approved by the School of Health and Social Care Ethics Panel at London South Bank University

Who to contact:

Researcher details: Bernadette Rae **email:** raeb3@lsbu.ac.uk **telephone:** 020 7815 8348 Supervisor

details: Prof. Alison Leary on alisonleary@yahoo.com

If you have any **concerns** about the way the study is conducted please contact the Chair of the School of Health and Social Care Ethics Panel on: HSCSEP@lsbu.ac.uk

Thank you for taking the time to read this information and for considering taking part in this study.

Appendix 6 – Questionnaire Consent Form

Research Project Consent Form

Full title of Project: A mixed-methods investigation of the practice of independent supplementary and community prescribers in the United Kingdom

Name: Bernadette Rae

Researcher Position: PhD student, London South Bank University

Contact details of Researcher: email: raeb3@lsbu.ac.uk **telephone:** 020 7815 8348

Taking part	Please read and select each box
I confirm that I have read and understood the information sheet and/or the researcher has explained the above study.	
I understand that my participation is voluntary and that I am free to withdraw up to the point of submission of the survey, without providing a reason.	
I agree to take part in the above study.	

Use of my information	Please read and select each box
I understand my personal details such as phone number and address will not be revealed to people outside the project.	
I understand that my data/words may be quoted in publications, reports, posters, web pages, and other research outputs.	

Appendix 7 – Questionnaire

Qualifications. In this survey, 'qualification' is annotation of your qualification on your professional register.

1) Consent to participate outlined in Q1

2) Please select your profession: Dietitian
   Midwife
   Nurse
   Paramedic
   Pharmacist
   Physiotherapist
   Podiatrist
   Radiographer – diagnostic
   Radiographer – therapeutic
   Other – please specify

   Please select year of registration as a professional as listed in Q1. (Drop down list options 2020-1967)

3) Which of the following prescribing qualifications do you currently hold? Please select all that apply.
   V100 specialist community prescribing
   V150 community prescribing
   V300 independent / supplementary prescribing
   V300 Supplementary prescribing only
   Other – please specify
   None

   Please select year of registration as a prescriber. (Drop down list options 2020-1994 and includes 'less than a year'.)

Clinical Practice:

4) If you work primarily with children and young people, please select your area of clinical practice. (If you work primarily with adults, please skip and go to Q5.)

   Community
   Emergency / urgent care
   End of life care
   Learning disabilities
   Long-term conditions (specialist)
   Mental Health
   Medicine, general
   Oncology

Primary Care
Surgery
Other

5) If you work primarily with adults, please select your area of clinical practice.

Aesthetics
Community
Emergency / urgent care
End of life care
Learning disabilities
Long-term conditions
Mental Health
Midwifery
Medicine, general
Oncology
Primary Care
Surgery
Other

6) Which sector do you work in? NHS / Private / Both / Prefer not to say

7) Please select the total number of contracted working hours per week (Select)
Full time (35+ hours)
Part-time, 25-34 hours/week
Part-time, 13-24 hours/week
Part time, up to 12 hours/ week

Prescribing Practice
This section asks questions about your prescribing role and typical prescribing practice.

8) Have you ever prescribed as a supplementary prescriber? Yes / No / NA / Don't know

9) Have you ever prescribed as an independent prescriber? Yes / No / NA / Don't know

10) Have you ever prescribed as a community prescriber (specialist or non-specialist) Yes / No / NA / Don't know

11) Please indicate approximate amount of time between qualifying as a prescriber with your regulatory body and writing first prescription (if never prescribed, select never).

Select:
2 weeks
or less
1 month

2 months
3 months
4 - 6 months
7-11 months
12 months or more
Never
I don't know
Prefer not to say

12) How frequently do you currently prescribe as an independent prescriber?

Most working days
Once or twice a week
Once or twice a
month   Less
frequently
I have never prescribed
I have stopped prescribing
Prefer not to say
I don't know
N/A

13) How frequently do you currently prescribe as a supplementary prescriber?

Every working day
Once or twice a week
Once or twice a month
Less frequently
I have never prescribed
I have stopped prescribing
Prefer not to say
I don't know
N/A

14) How frequently do you currently prescribe as a community prescriber?

Every working day
Once or twice a week
Once or twice a month
Less frequently
I have never prescribed
I have stopped prescribing
Prefer not to say
I don't know
N/A

15) Please state approximately how many items you prescribe per week:

       I am not currently prescribing
       1-4 items
       5-10 items
       11-20 items
       21-30 items
       31-40 items
       41-50 items
       50+ items
       Unsure
       Prefer not to say
       N/A

16) How do you use the national competency framework? Please select all that apply to you.

I am not familiar with the Framework
I feel it is not relevant to my practice
I used the Framework during my prescribing course
I use the Framework to support student prescribers in clinical practice
I use the Framework to develop my own prescribing practice
I use the Framework in my annual appraisals
The organisation I work for expects me to use the framework but gives no guidance / ideas on how I do that
The organisation I work for expects me to use the framework and **does** give guidance / ideas on how I can do that.
The organisation I work for has made no stipulation about using the framework.
Prefer not to say
Other

17) If you have never written a prescription, please indicate your reasons. Select all that apply.

       Not yet annotated on the register
       Change of job to non-clinical role
       Change of clinical area
       Lack of self-confidence
       Lack of managerial support
       Other
       N/A

18) If you have prescribed but stopped prescribing for 3 months or longer, please indicate your reasons why. Select all that apply.

Change of job to non-clinical role
Change   of   clinical   area
Maternity leave
Lack of self-confidence
Lack of managerial support
Other
N/A

b) Please indicate how long you stopped prescribing for (select):
3-5 months
6-9 months
10months – 1 year
2 years
3 years
4 years
5 years
More than 5 years
I don't know
Prefer not to say
N/A

19) Have you returned to prescribing?

Yes
No and I do not intend to
No but I intend to
Undecided
N/A

20) If you have returned to prescribing, please indicate support you were offered. Please select all that apply

None
Return to prescribing course
Supervision
CPD
Temporarily using supplementary prescribing only
Temporarily limited personal formulary
Other
N/A

Confidence

21) Please rate your level of confidence in these next two questions

    a) How confident did you feel to prescribe in the first six months after qualifying as a prescriber?
    Very confident – confident – unconfident – very unconfident – prefer not to say

    b) How confident do you feel to prescribe now?
    Very confident – confident – unconfident – very unconfident – prefer not to say

    Please indicate whether you agree or disagree with this statement: There have been times lack of confidence has prevented me prescribing:
    Strongly agree - agree - disagree - strongly disagree – prefer not to say

In the following questions, support and supervision could be from the clinical mentor who supported you throughout your prescribing course - *or* someone else who adopted a supervisory role after you qualified.

Organisational and colleague support

22) Did you have the level of support you felt you needed when you qualified as a prescriber:
    Yes - No - prefer not to say

23)
    Do you have clinical supervision that includes your prescribing practice?
    Yes - No - Prefer not to say - NA

24) How do you feel clinical supervision affects you in relation to your prescribing?

    Makes a difference to my self-confidence: positive – negative – no difference – prefer not to say
    Makes a difference to learning opportunities: positive – negative – no difference – prefer not to say
    Makes a difference to my relationship with colleagues: positive – negative – no difference – prefer not to say

25) Please indicate if your workplace has the following in place:

  Does your workplace provide updates for prescribers? Yes - No - Don't know - Prefer not to say
    Does your workplace have policies that restrict your practice? Yes - No - Don't know - Prefer not to say - NA

As a supplementary prescriber do you have difficulty finding a doctor to act as the independent prescriber? Yes - No - Prefer not to say - NA

These next few questions are about your experience following a prescribing error and support you received. You are not being asked about what happened or how it happened.

26) Since gaining your prescribing qualification, how many prescribing errors would you estimate you have made? If your answer is 'none' you can proceed to Q28.

> None
> 1
> 2-4
> 5   or more
> Prefer not to say
> I don't know

27) I felt supported after the error
>   Strongly agree - agree - disagree - strongly disagree – prefer not to say - NA

>   Prescribing processes have been changed as a result of review/reflection following an error   Strongly agree - agree - disagree - strongly disagree – prefer not to say - NA

>   I lost confidence to prescribing following an error
>   Strongly agree - agree - disagree - strongly disagree – prefer not to say - NA

>   I have regained confidence to prescribe
>   Strongly agree - agree - disagree - strongly disagree – prefer not to say - NA

>   I am now anxious about prescribing.
>   Strongly agree - agree - disagree - strongly disagree – prefer not to say - NA
>   **Continuous Professional Development**

28) Have you attended prescribing-focused continuous professional development (CPD) in last 12 months: Yes - No - Prefer not to say -NA

29) CPD supports my prescribing practice
>   Strongly agree - agree - disagree - strongly disagree – prefer not to say

30) Are you given study leave to attend CPD events? Never - sometimes -every time - prefer not to say -NA

31) How often do you attend prescribing focussed CPD? Quarterly - 6-monthly - annually - less often - prefer not to say - NA

32) Are you given financial support towards CPD events? None - partial - in full - prefer not to say

33) Have you been involved in providing CPD relevant to prescribing? Please select all that apply. Yes - No - Prefer not to say

    a) If you have been involved in providing CPD please indicate in what capacity. Please select all that apply. Delivered lecture
       Facilitated workshop
       Organised event
       N/A
       Other

Role Development. Since 2018, it has been possible for experienced independent prescribers of any profession to mentor student prescribers.

34) Have you ever been asked to mentor prescribing students or newly qualified prescribers?
       No I haven't, but I feel ready.
       No I haven't, I do not feel ready.
       Yes I have and I feel ready.
       Yes I have but I do not feel ready.
       Yes and I feel ready but it is not practical for me to do so
       Prefer not to say

About you

35) What is your age bracket?
       20-29
       30-39
       40-49
       50-59
       60-
       69
       70+
       prefer not to say

36) How do you identify your gender?
       Woman
       Man
       Non-binary
       Other
       Prefer not to say

37) What is your ethnic group – please select:
       White
           English / Welsh / Scottish / Northern Irish / White British
           Irish
           Gypsy or Irish Traveller
       Mixed ethnicity

White and Black Caribbean

White and Black African   White
and Asian

Any other mixed ethnicity

Asian / Asian British

Indian

Pakistani

Bangladeshi

Chinese

Any other Asian background

Black / African / Caribbean / Black British

African

Caribbean

Any other Black / African / Caribbean

Any other ethnic group

Arab

Any other ethnic group

Prefer not to say

38)   Geographical   area

England –

South West

East of England

South East

East Midlands

West Midlands

Yorkshire and the Humber

North West

North East

London

Wales –

North

Mid

South East

South West

Scotland –

South East

South West

North East

North West

Central East

Central West

Highlands and Western Isles

Shetland and Orkney Islands

Edinburgh

Glasgow

Ireland –
North West
West
Midland East
South East
Shannon
Cork/Kerry
Dublin

Northern Ireland

Prefer not to say

Last Question

The second phase of this research will be a 1:1 confidential interview to explore the experience of prescribing practitioners in the UK. This invitation includes practitioners who have never prescribed or stopped prescribing. If you are willing to participate in a follow up interview, please provide your preferred contact details.

You will be contacted by the researcher. Your contact details will be safely and immediately deleted if a) you change your mind at any point and do not wish to be interviewed or b) in the event high response numbers would mean that not all volunteers need to be interviewed. Your name and contact details will be downloaded separately from your survey answers so I will not be able to identify how you have answered any of the survey questions.

Please note, candidates who are known to the researcher cannot be interviewed to avoid unintentional bias.

It is anticipated that interviews will start up to 9-12 months after Phase 1 (the survey) to allow for data collection and analysis. If you have questions, feel free to email the researcher, Bernadette Rae, on raeb3@lsbu.ac.uk

Thank you for participating in this survey. I appreciate your time in contributing to greater understanding of the practice and experience of prescribing practitioners in the UK.

Appendix 8 – Agreements in Principle

College of Paramedics

- College of Paramedics

Dear Bernadette

Thank you for your email. If you would like to send through a copy of your survey, then we can look at it within our governance committee to see whether in principle the CoP is able to help you with distribution. If so, then providing you get ethics permissions we will be able to progress this for you.

Please feel free to email me direct.

kindest regards

College of Paramedics

British Dietetic Association

Thu 2/25/2021
15:03 To:

- Rae, Bernadette

Dear Bernadette,

Many thanks for your email.

We could look at sending this out to BDA members via a post on the BDA research page, or even our supplementary prescribing forum.

When you a ready, and you have ethics approval you should provide a brief description of the survey and its purpose and link to the survey, then we can look to get this circulated to BDA members for you.

Any questions please let us know.

Kind Regards.

Royal Society of Radiographers

Tue 3/2/2021
18:09

- Rae, Bernadette

Dear Bernadette

Many thanks indeed for sharing. It's very helpful to see.

This is a topic of interest and importance to our members so we would be very happy indeed to assist with promotion out to our groups when you are ready.

With very best wishes

Royal College of Midwives

Wed 2/24/2021
13:48 To:

- Rae, Bernadette

Dear Bernadette

Thank you for contacting the RCM about your research into the practice of independent supplementary and community prescribers. It looks an interesting piece of work. As you can imagine, we are careful not to inundate our members with emails, of which they currently have a large number from many sources. The usual way we support dissemination is to have a link to the study or survey on our website and then circulate via social media. We occasionally can include a link in one of our routine emails, but this depends on what else needs to be included.

I suggest, that when you have got passed Ethics and are ready to recruit, you email me with your protocol, survey etc and I will then discuss it with my colleagues at the Expert Clinical Advisory Group.

Finally, congratulations on starting your PhD. I am also in the first year of mine but not as far along as you.

Best wishes

Royal College of Nursing

From:
Sent: 04 March 2021 14:56
To: [Bernadette Rae](#)
Subject: Help with circulating survey

Hi Bernadette,

Apologies for the delayed response. I have discussed your query with policy, and we can circulate your survey within forums, but it would have to go through an approval process if it were to be circulated amongst our membership. I note that you were advised that you could look at the forums and contact the lead yourself and wondered if you had managed to do this? If not, I am happy to send an email to the forum lead as an introduction - just let me know which forum might be most suitable (forums can be viewed on the RCN website under 'professional development').

Let me know if you prefer to chat and, in the meantime, good luck with your research,

kind regards,

Queens Nurse Institute

Dear Bernadette

I met with … of the Queens Nursing Institute
As you know they have extensive membership/mailing list of community nurses in a variety of settings
She has confirmed that you can access this to send out your survey to this group.

Kind regards

Royal College of Podiatrists

Wed 3/10/2021

15:46 To:

- Rae, Bernadette

Dear Bernadette

Thank you for emailing the College.

Yes, we can put in our weekly newsletter to members asking them to fill in your survey once you have ethics. You will need to send an outline of the research for review by our clinical director … plus a short intro to put in the newsletter.

Hope that helps,

The College of Podiatry

Appendix 9 – Ethics Approval, Phase 1

Dear Bernadette Emma

Application ID: ETH2021-0028

Project title: Doctoral Research Project

Lead researcher: Miss Bernadette Emma Rae

Thank you for submitting your proposal for ethical review.
I am writing to inform you that your application has been approved.
Your project has received ethical approval from the date of this
notification until 5th July 2025.

Yours

Chair HSC School Ethics Panel

Ethics ETH2021-0028: Miss Bernadette Emma Rae (Medium risk)

Appendix 10 – Code Book, Phase 1

SPSS variable Name	Full VN	Coding Instructions
Consent_1	Read Understood Info	1
Consent_2	Voluntary	1
Consent_3	Agreement	1
Consent_4	Confidentiality_1	1
Consent_5	Confidentiality_2	1
Prof	Profession	1 = dietitian 2 = midwife 3 = nurse 4 = paramedic 5 = pharmacist 6 =physiotherapist 7 = podiatrist 8 = radiographer, diagnostic 9 = radiographer, therapeutic 10 = Other
Prof_Other	Profession other	
Y_Reg	Year of prof registration	2018 to 1967
Qual_V100	V100	1
Qual_V150	V150	2
Qual_V300_IP_SP	V300 IP and SP	3
Qual_V300_SP	V300 SP only	4
Qual_None	None	5
Qual_Other	Qualification other	6
Qual_Other_EXP	Qual other explanation	1 = frailty
Y_Qual	Year of prescribing qualification	Less than 12 months. 2020 to 1994.
CYPCP	Child and Young people Clinical Practice	1 = community 2 = Emergency/urgent care 3 = EoL 4 = LD 5 = LTC (specialist) 6 = MH 7 = Gen med 8 = oncology 9 = primary care 10 = surgery 11 = other

CYPCP_Other	Child and Young people Clinical Practice, other	
ACP	Adult Clinical Practice	1 = aesthetics 2 = community 3 = Emergency/urgent care 4 = EoL 5 = LD 6 = LTC (specialist) 7 = MH 8 = Midwifery 9 = Gen med 10 = oncology 11 = primary care 12 = surgery 13 = other
ACP_Other	Adult Clinical Practice, other	
Sect_NHS	NHS	1
Sect_Priv	Private	2
Sect_Both	Both	3
Sect_PNTS	Prefer not to say	4
ConHour	Contracted hours per week	1 = FT 35+ 2 = 25-34 3 = 13-24 4 = up to 12
SPx	SP prescribing	1 = yes 2 = no 3 = N/A 4 = prefer not to say
IPx	IP prescribing	1 = yes 2 = no 3 = N/A 4 = prefer not to say
CPx	Community prescribing	1 = yes 2 = no 3 = N/A 4 = prefer not to say
Qual_Px	Time elapsed qualifying to prescribing	1 = 1 week 2 = 2 weeks 3 = 3 weeks 4 = 1 month 5 = 2 months 6 = 3 months 7 = 4 months 8 = 5 months 9 = 6 months 10 = 7-11months 11 = 1 year or more 12 = Never 13 = I don't know 14 = Prefer not to say
Freq_IP	Frequency IP prescribing	1 = every working day 2 = once or twice a week 3 = once or twice a month 4 = less frequently 5 = Never 6 = Stopped 7 = Prefer not to say 8 = I don't know 9 = N/A
Freq_SP	Frequency SP prescribing	1 = every working day 2 = once or twice a week 3 = once or twice a month 4 = less frequently 5 = Never 6 = Stopped 7 = Prefer not to say 8 = I don't know 9 = N/A
Freq_CP	Frequency Community prescribing	1 = every working day 2 = once or twice a week 3 = once or twice a month 4 = less frequently 5 = Never 6 = Stopped 7 = Prefer not to say 8 = I don't know 9 = N/A
NoWeek	Number of items prescribed weekly	1 = none 2 = 1-4 3 = 5-10 4 = 11-20 5 = 21-30 6 = 31-40 7 = 41-50 8 = 50+ 9 = Unsure 10 = Prefer not to say 11 = N/A
CF_Unfam	Unfamiliar	1
CF_Irrel	Irrelevant	2
CF_Course	Course	3
CF_Students	Students	4
CF_Develop	Development	5

CF_Ap praisal	Appraisal	6
CF_Wn oGuid e	No guidance	7
CF_Wy esGuid e	Guidance	8
CF_Wn il	No stipulation	9
CF_PN TS	CF Prefer not to say	10
CF_Ot her	CF Other	11
CF_Ot her_EX P	CF Other explanation	
Never _Reg	Never - not on register	1
Never _NonC lin	Never - no longer clinical	2
Never _Chan geClin	Never - changed clinical area	3
Never _Conf	Never - lacks confidence	4
Never _Man	Never - lacks managerial support	5
Never _NA	Never - not applicable	6
Never _Other	Never - other	7
Never _Other _EXP	Never - other explanation	
Break_ NonCLi n	Break - non-clinical	1
Break_ Chang eClin	Break - changed clinical area	2
Break_ Mat	Break - maternity leave	3
Break_ Sick	Break - prolonged sick leave	4
Break_ Conf	Break - lacks confidence	5

Break_Man	Break - lacks support	6
Break_NA	Break - not applicable	7
Break_Other	Break - other	8
Break_Other_EXP	Break - other explanation	1 = retired
StopTime	How long stopped	1 = 3-5months 2 = 6-9months 3 = 10months-1 year 4 = 2 years 5 = 3 years 6 = more than 5 years 7 = I don't know 8 = N/A
Ret_Px	Returned to prescribing	1 = Yes 2 = No and no intent 3 = No but intend 4 = Undecided 5 = N/A
Supp_Ret_None	Support - none	1
Supp_Ret_Course	Support - course	2
Supp_Ret_Sup	Support - supervision	3
Supp_Ret_CPD	Support - CPD	4
Supp_Ret_SP	Support - SP prescribing	5
Supp_Ret_PF	Support - limited formulary	6
Supp_Ret_NA	Support - not applicable	7
Supp_Ret_Other	Support - other	8
Supp_Ret_Other_EXP	Support - other explanation	
Conf3	Confidence when new	1 = Very confident 2 = confident 3 = unconfident 4 = very unconfident 5 = PNTS
Conf_Now	Confidence now	1 = Very confident 2 = confident 3 = unconfident 4 = very unconfident 5 = PNTS
Conf_Prevent	Prevented prescribing	1 = Strongly agree 2 = agree 3 = disagree 4 = strongly disagree 5 = prefer not to say
Supp3	Support match need when new	1 = Strongly agree 2 = agree 3 = disagree 4 = strongly disagree 5 = prefer not to say

SupNow	Supervision now	1 = Yes 2 = No 3 = Prefer not to say
Sup_Conf_Pos	Confidence - Positive	1
Sup_Conf_Neg	Confidence - Negative	2
Sup_Conf_Diff	Confidence - No difference	3
Sup_Conf_PNTS	Confidence - Prefer not to say	4
Sup_Opp_Pos	Opportunities - Positive	1
Sup_Opp_Neg	Opportunities - Negative	2
Sup_Opp_Diff	Opportunities - No difference	3
Sup_Opp_PNTS	Opportunities - Prefer not to say	4
Sup_Rel_Pos	Relationships - Positive	1
Sup_Rel_Neg	Relationships - Negative	2
Sup_Rel_Diff	Relationships - No difference	3
Sup_Rel_PNTS	Relationships - Prefer not to say	4
WUP	Workplace updates	1 = Yes 2 = No 3 = Don't know 4 = Prefer not to say
Wrest	Workplace restrictions	1 = Yes 2 = No 3 = Don't know 4 = Prefer not to say
SupSP	SP prescribing support	1 = Yes 2 = No 3 = Don't know 4 = Prefer not to say
Error1	Errors - number	1 = None 2 = 1 3 = 2-4 4 = 5 or more 5 = Prefer not to say 6 = I don't know
ErrorS_SA	Post-error support - Strongly agree	1
ErrorS_A	PE Support - agree	2
ErrorS_D	PE support - disagree	3

ErrorS_SD	PE support - strongly disagree	4
ErrorS_PNTS	PE support - prefer not to say	5
ErrorS_NA	PE Support - not applicable	6
ErrorP_SA	Processes changed - strongly agree	1
ErrorP_A	Processes - agree	2
ErrorP_D	Processes - disagree	3
ErrorP_SD	Processes - strongly disagree	4
ErrorP_PNTS	Processes - prefer not to say	5
ErrorP_NA	Processes - not applicable	6
ErrorC_SA	Lost confidence - strongly agree	1
ErrorC_A	Lost confidence - agree	2
ErrorC_D	Lost confidence - disagree	3
ErrorC_SD	Lost confidence - strongly disagree	4
ErrorC_PNTS	Lost confidence - prefer not to say	5
ErrorC_NA	Lost confidence - not applicable	6
ErrorRC_SA	Regained confidence - strongly agree	1
ErrorRC_A	Regained confidence - agree	2
ErrorRC_D	Regained confidence - disagree	3
ErrorRC_SD	Regained confidence - strongly disagree	4

ErrorRC_PNTS	Regained confidence - prefer not to say	5
ErrorRC_NA	Regained confidence - not applicable	6
ErrorA_SA	Anxious - Strongly agree	1
ErrorA_A	Anxious - Agree	2
ErrorA_D	Anxious - disagree	3
ErrorA_SD	Anxious - Strongly disagree	4
ErrorA_PNTS	Anxious - prefer not to say	5
ErrorA_NA	Anxious - not applicable	6
CPD_12	CPD in last year	1 = Yes 2 = No 3 = Prefer not to say
CPD_Supp	CPD supports practice	1 = Strongly agree 2 = agree 3 = disagree 4 = strongly disagree 5 = prefer not to say
CPD_SL	CPD study leave	1 = Never 2 = Sometimes 3 = every time 4 = prefer not to say
CPD_Freq	CPD frequency	1 = Monthly 2 = quarterly 3 = 6-monthly 4 = annually
CPD_Fund	CPD funding	1 = None 2 = Partial 3 = in full 4 = prefer not to say
CPD_Prov	CPD provider	1 = Yes 2 = No 3 = Prefer not to say
CPD_Prov_Lect	CPD - lecture	1
CPD_Prov_Wshop	CPD - workshop	2
CPD_Prov_Org	CPD - organised	3
CPD_Prov_NA	CPD - not applicable	4
CPD_Prov_Other	CPD - other	5
CPD_Prov_Other_EXP	CPD - other explanation	1 = sought own CPD 99 = other

Mentor	Mentor roles	1 = No but ready 2 = No, not ready 3 = Yes and ready 4 = Yes not ready 5 = Yes not practical 6 = Prefer not to say
Age	Age range	1 = 20-29 2 = 30-39 3 = 40-49 4 = 50-59 5 = 60-69 6 = 70+ 7 = Prefer not to say
Sex	Sex	1 = Female 2 = male 3 = non-binary 4 = prefer not to say
Ethnicity	Ethnicity	1 = English/Welsh/Scottish/Northern Irish/White British 2 = Irish 3 = Gypsy or Irish Traveller 4 = White & Black Caribbean 5 = White & Black African 6 = White & Asian 7 = Other mixed ethnicity
		8 = Indian 9 = Pakistani 10 = Bangladeshi 11 = Chinese 12 = Any other Asian background 13 = African 14 = Caribbean 15 = Any other black/African/Caribbean 16 = any other ethnic group
		17 = Prefer not to say
Area	Geographical area	1 = SW Eng 2 = East of Eng 3 = SE Eng 4 = East Mids 5 = West Mids 6 = Yorkshire & Humber 7 = NW Eng 8 = NE Eng 9 = London 10 = North Wales 11 = Mid-Wales 12 = SE Wales 13 = SW Wales
		14 = SE Scotland 15 = SW Scotland 16 = NE Scotland 17 = NW Scotland 18 = Central East Scotland 19 = Central West Scotland 20 = Highlands & West Isles 21 = Shetland & Orkney Isles
		22 = Edinburgh 23 = Glasgow 24 = NW Ireland 25 = West Ireland 26 = Midland East Ireland 27 = SE Ireland 28 = Shannon 29 = Cork/Kerry 30 = Dublin 31 = N.Ireland 32 Prefer not to say

Appendix 11 – Semi-Structured Interview Protocol

Phase 2 interview protocol.

Phase 2 objectives	Stage of interview and which Phase 1 results	Interview Questions
	Part One: Introduction	- Introduce myself as the researcher. - Outline the topic and purpose of Phase 2 – confirm the participant has the information sheet and had time to read it. - Reiterate confidentiality. - Explain the structure and process of the interview. No right or wrong answers, this is about experience and perspective. - Explicitly discuss consent and that the participant has and is happy to sign the consent form. - Check if any questions. - Check if participant is happy to proceed.
To explore the experience of experienced and newly qualified prescribing practitioners.	**Part Two:** Background / contextual information **Relevant Phase 1 Findings** Mismatch between qualification and declared prescribing practice	- Confirm profession and prescribing qualification/s. - Invite the participant to talk about their prescribing career to date. If appropriate to prescribing practice: supplementary prescribing - Ask if the participant has ever used supplementary prescribing. Explore experience of this – any particular difficulties or facilitators? - Reason/s why supplementary prescribing was used?

	Newly Qualified • 186 (45.6%) lacked confidence when newly qualified • 124 (30.4%) found support did not match need when first qualified	• What was/is your experience of using supplementary prescribing? • Explore experience when was newly qualified Prompt questions: • Can you say more about that? • Do you have an example...? • Is there anything that would have helped / that did help?
• To understand how prescribing practitioners perceive and apply the national competency framework for prescribers. • To explore reasons for not prescribing.	**Part Three:** Current experience **Relevant Phase 1 Findings** • 9.8% unaware or feel Competency Framework is irrelevant • 55.5% used in prescribing course • 24.3% no organisational requirements • 4.7% never prescribed (variety of reasons given)	Competency Framework • Ask if the participant about their experience and perspective of using the competency framework. Never Prescribed • If not already clear, establish if participant has ever prescribed or not. • If they have not, ask them to discuss reasons for not prescribing. Prompt questions:

| | | - Can you say more about that? |
| | | - Do you have an example...? |

To explore how prescribing practitioners experience barriers and facilitators to their practice.	**Part Four:** Perceptions of influences on prescribing	
	Relevant Phase 1 Findings	
	• Effect of supervision, up to 50.5% positive, up to 0.7% negative, up to 16.7% neutral.	• Do you feel that clinical supervision makes a difference to your practice?
	• Continuous Professional Development: 237 (58.1%) had CPD in last year. 354 (86.7%) found CPD supports prescribing practice.	• How has CPD makes a difference to your practice?
	• ==Prescribing errors. n127 (42.2%) have made one or more errors. n166 received post-error support. n69 lost confidence. n20 remain anxious about prescribing.==	• SIGNPOST: I am going to ask a question about prescribing errors. I am not asking what happened, but if have you made any prescribing errors, how did that experience affect you?
		Prompt questions:
		- Can you say more about that?
		- Do you have an example...?
		- Would you like the opportunity to...?
		- Can you explain why/how...?
	Part Five: Final question	• Invite thoughts and opinions about what might help / support their

	Relevant Phase 1 Findings	prescribing practice (this can be in relation to any aspect). Invite thoughts about prescribing role going forward. What motivated to take prescribing course? Have hopes / original motivation been realised?
		• Invite any final comment about what is of interest to or important to the participant.
		• Invite any final questions from participant.
		Prompt questions: - Can you say more about that? - Do you have an example...? - Would you like the opportunity to...?
	Part Six: Conclusion	• Thanks given to the participant for their contribution. • Final confirmation of confidentiality.

Appendix 12 – Semi-Structured Interview Guide

Interview Guide

Background / Contextual Information	Prompt Questions	Notes
• Please confirm profession and prescribing qualification/s. • Can you to tell me about your prescribing career generally – for example, how long you have been prescribing for, the clinical area you prescribe in, if you have had any changes in your prescribing practice. Explore experience when was newly qualified. • Thinking back to when you were a newly qualified prescriber – how did you find that transition from student to being a qualified, practicing prescriber?	 - Do you have an example…? - Is there anything that would have helped / that did help? - Have you ever used supplementary prescribing? - Can you say more about…? - Do you have an example…? - Is there anything that would have helped / did help at that time? - Is there anything that you felt restricted you at that time? - How did that affect your confidence at the time? - Can you say more about…?	
Current Experience	**Prompt Questions**	**Notes**
Competency Framework • Can you say something about how useful or practical you find the Competency Framework and if / how you use it?	 - Do you have an example…? - Why do you think that is…? - What effect do you think the Framework has on your practice? - Can you say more about…? Never Prescribed *If applicable* - I understand you have qualified but not yet actually	

	prescribed. Can you tell me about why that is?	
Perceived Influences on Prescribing Practice	**Prompt Questions**	**Notes**
• How do you feel that clinical supervision affects your practice?	- Do you have an example…? - Can you explain why/how…? - Could anything help this work better for you? - Can you say more about…?	
• What are your opinions and experience of applying continuous professional development to your prescribing practice?	- Do you have an example…? - Would you like the opportunity to…? - How does this meet your expectations? - Do you feel you have the level of CPD you need?	
• SIGNPOST: I am going to ask you a question about prescribing errors. I am not asking what happened or how it happened. If have you made any prescribing errors, how did that experience affect you?	- Is there anything that would have helped…? - Is there anything that made that experience worse…? - Has this affected how confident you feel now? - Can you say more about…?	
Final Questions	**Prompt Questions**	**Notes**
• Do you have any thoughts and opinions about what might help / support your current prescribing practice?	- Do you have an example…? - Would you like the opportunity to…? - Can you say more about…?	.
• Do you have any thoughts and opinions about what has restricted your prescribing practice?	- Has this affected your confidence as a prescriber? - Do you have an example…? - Can you say more about…? - Can you say more about…?	

• Do you have any thoughts or aspirations about your prescribing role going forward?	- Do you have an example…?	
• What motivated you to take prescribing course?	- Have your hopes / original motivation been realised? - Do you have an example…?	
• Is there anything you'd like to add that you feel is interesting or is important to you?		
• Do you have any questions?		
Conclusion		
• Thank you for your time and contribution.		

Appendix 13 – Interview Participant Information Sheet

London
South Bank
University
EST 1892

Study title: A mixed-methods investigation of the practice of independent supplementary and community prescribers in the United Kingdom

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

The purpose of the study:

I am a PhD student at London South Bank University, and I am investigating the practice and experience of independent, supplementary and community prescribers in the UK. There are now more professions than ever who are eligible to undergo the education as an independent, supplementary or community prescriber. I would like to invite you to participate in Phase 2 of this research study. This is a single interview which will take about one hour of your time.

Why you have been asked to participate

You are being invited to participate in Phase 2 of this research as you were a respondent to the survey in Phase 1 and indicated that you may be willing to being interviewed by the researcher. All participants are annotated on the professional register of NMC, HCPC or GPhC as an independent, supplementary (V300) or a community prescriber (V100 / V150).

The voluntary nature of participation

It is up to you to decide whether or not to take part. Even though you indicated you may be willing to be interviewed by the researcher, you are free to change your mind and decline the invitation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time and without giving a reason. However, once you have undertaken the interview, the data (words you have spoken) can only be withdrawn up to the point of data analysis as the data will be anonymised at this stage and your data will not be identifiable. If you wish to withdraw you may simply contact the researcher and state that you are withdrawing.

What will happen if you take part?

Phase 2 of the research are one-to-one semi-structured interviews (one interview per participant). This can take place in person or via Microsoft Teams. Specific information will be provided if you choose to take part. You are free to participate in phase one only or phase one and two.

Possible disadvantages/risks to participation

This study is not intended to cause any harm. However, if any questions cause you any discomfort or distress, it is important to use the available support. You can access free services through NHS counselling services, https://www.england.nhs.uk/mental-health/adults/iapt/ or through your occupational health department.

Possible benefits to participation

You will not benefit directly or personally, but you will be making a valuable contribution to understanding the practice and experience of prescribers in the United Kingdom. This will be informative for employers and prescribers in understanding the experience of prescribers of different professions.

Outline data collection and confidentiality

All the information collected about you and other participants will be kept strictly confidential (subject to legal limitations). Data generated by the study will be retained in accordance with the University's Code of Practice. Digital recordings and records will be stored on a LSBU password protected server accessible only by the research team. Fully anonymised research data is stored on LSBU's open (or add funding organisation details if required). For non-anonymised data (personal data) data will be stored for exactly as long as it is needed in compliance with the General Data Protection Regulations. All personal data will be kept for a period of 5 years after the completion of the project or until the end of the project and then destroyed. No information regarding your participation in the study will be shared outside the research team.

In the write up of the study all data will be completely anonymised. No names or any identifiable information will be included.

What will happen to the results of the research study on completion

On completion of this research, it will be submitted as part-fulfilment of a PhD. The results will be disseminated by publication in peer reviewed journals and conference presentations.

Who is organising and funding the research

This research is being conducted as I am a student at London South Bank University. I am also a member of staff at London South Bank University. I am conducting this research as a PhD student of Health Care in the School of Health and Social Care of London South Bank University.

Who has reviewed the study?

This research has been reviewed and approved by the School of Health and Social Care Ethics Panel at London South Bank University

Who to contact:

Researcher details: Bernadette Rae **email:** raeb3@lsbu.ac.uk Supervisor

details: Prof. Alison Leary on alisonleary@yahoo.com

If you have any **concerns** about the way the study is conducted please contact the Chair of the School of Health and Social Care Ethics Panel on: HSCSEP@lsbu.ac.uk

Thank you for taking the time to read this information and for considering taking part in this study.

Appendix 14 – Interview Consent Form

London South Bank University
EST 1892

Research Project Consent Form
Full title of Project: A mixed-methods investigation of the practice of independent supplementary and community prescribers in the United Kingdom

Name: Bernadette Rae
Researcher Position: PhD student, London South Bank University
Contact details of Researcher: email: raeb3@lsbu.ac.uk **telephone:** 020 7815 8348

Taking part	Please initial in each box
I confirm that I have read and understood the information sheet and/or the researcher has explained the above study. I have had the opportunity to ask questions.	
I understand that my participation is voluntary and that I am free to withdraw at any time, without providing a reason.	
I agree to take part in the above study.	
I agree to keep all discussions confidential.	

Use of my information	Please initial in each box
I understand my personal details such as phone number and address will not be revealed to people outside the project.	
I understand that my data/words may be quoted in publications, reports, posters, web pages, and other research outputs.	
I agree to the interview being audio recorded.	
I agree to the use of anonymised quotes in publications.	

_____
Name of Participant

_____
Name of Researcher

_____   _____
Date   Signature

_____   _____
Date   Signature

Appendix 15 – Ethics Approval, Phase 2

Dear Bernadette Emma

Application ID: ETH2021-0028

Project title: Doctoral Research Project

Lead researcher: Miss Bernadette Emma Rae

Thank you for submitting your proposal for ethical review.

I am writing to inform you that your application has been approved.

Your project has received ethical approval from the date of this notification until 5th July 2025.

Yours

Chair HSC School Ethics Panel

Ethics ETH2021-0028: Miss Bernadette Emma Rae (Medium risk)

Appendix 16 – Questionnaire Development

Question No.	Question and Related and Quantitative Research
Q2	**Please select your profession:** 1) Courtenay and Carey (2008) 2) Green et al. (2009) 3) Courtenay, Carey & Stenner (2012) 4) Tatterton (2017) 5) Hindi et al. (2019) 6) Cope, Tully and Hall (2019)
Q2b	**Please select the year of your registration as a professional:** 1) Ross and Kettles (2012) 2) Hindi et al. (2019) 3) Cope, Tully and Hall (2019)
Q3	**Which of the following prescribing qualifications do you hold? Please select all that apply.** 1) Green et al. (2009) 2) Courtenay, Carey and Stenner (2012) 3) Cope, Tully and Hall (2019)
Q3b	**Please select the year of registration as a prescriber** 1) Courtenay and Carey (2008) 2) Courtenay, Carey and Stenner (2012) 3) Tatterton (2017) 4) Cope, Tully and Hall (2019) 5) Hindi et al. (2019)
Q4 and Q5	**If you work primarily with children and young people (adults - Q5) please select your area of clinical practice:** 1) Green et al. (2009) 2) Courtenay, Carey and Stenner (2012)
Q7	**Please select the total number of your contracted working hours per week:** 1) Courtney and Carey (2008) 2) Green et al. (2009) 3) Courtenay, Carey and Stenner (2012)

Question No.	Question and Related and Quantitative Research
Q8 and Q9	**Have you ever prescribed as a supplementary prescriber (independent – Q9)?** 1) Green et al. (2009) 2) Courtenay, Carey and Stenner (2012)
Q15	**Please state approximately how many items you currently prescriber per week:** 1) Courtenay and Carey (2008) 2) Green et al. (2009) 3) Courtenay, Carey and Stenner (2012) 4) Tatterton (2017) 5) Cope, Tully and Hall (2019) 6) Hindi et al. (2019)
Q17	**If you have never prescribed, please indicate your reasons:** 1) Ross and Kettles (2012) 2) Hindi et al. (2019)
Q21	**Please rate your level of confidence:** 1) Ross and Kettles (2012) 2) Green et al. (2009)
Q22	**Did you have the level of support you felt you needed when you qualified as a prescriber?** 1) Courtenay, Carey and Stenner (2012) 2) Ross and Kettles (2012)
Q23	**Do you currently have clinical supervision that affects you in relation to your prescribing?** 1) Ross and Kettles (2012)
Q26	**Since gaining your prescribing qualification, how many prescribing errors would you estimate you have made? If the answer is none proceed to Q28.** 1) Cope, Tully and Hall (2019)

Question No.	Question and Related and Quantitative Research
Q28	**Have you attended prescribing-focused continuous professional development (CPD) in the last 12 months?** 1) Courtenay and Carey (2008) 2) Green et al. (2009) 3) Courtenay, Carey and Stenner (2012) 4) Ross and Kettles (2012) 5) Tatterton (2017)

Appendix 17 – Excerpt from Reflexive Journal, Interviews

4th July 2022

I've just finished my first interview. I was a little nervous with anticipation before we both logged on, but once we met and we started I relaxed. This gave me a real insight into what it's like for her to practice as an unsupported prescriber. I thought about my own experience and the people and support network I had around me when I qualified. A world away from her experience.

There was one point in the interview – I was concerned about her response when I asked about the competency framework. I was careful to ask if she was aware of it, not just bluntly ask how she uses it. She had not heard of it and felt she should have. I explained that many people may not be aware of it, and not all courses used it before 2018/19, so after she had done her course. I asked her if she was OK and confirmed that her not being aware of the Framework was a failing. She told me she had been surprised but was actually interested to hear about it and that she would look it up later. I was reassured by our interaction.

I felt this was a strong and interesting interview and I am looking forward to the next ones.

Appendix 18 – Codes by Senior Qualitative Researcher, One Interview

Yellow = Deductive

Black = Inductive

Code	Occurrence
Confidence	11
Developing confidence	1
Impact of time delay in starting prescribing	1
Nature of drugs to be prescribed	11
Speciality-related prescribing process	1
Monitoring of drugs	1
Prescriber knowledge of patient	11
Role with medication without being a prescriber	1
Competency Framework use	
CPD value	11
Errors (prescribing)	
Motivation	11
Motivation – career development	1
Motivation – team benefit	1
Never prescribed	11
Emotions about not prescribing	11
Barriers to prescribing – Trust lacks experience	11
Barriers to prescribing – Trust lacks understanding	11
Barriers to prescribing – Trust staff issue	111111
Barriers to prescribing – organisational issue	11
Barriers to prescribing – time	1
Barriers to prescribing – personal pressure	1
Barriers to prescribing – clinical management plan	11
Barriers to prescribing – legislation/policy	11
Facilitator for prescribing	11
Team support	1
Profession	1
DRs cannot be IPs	111
Frustration about profession-specific prescribing regulations	1111
Prescribing role requirement	1
Qualification	1
Prescribing course	11
Prescribing course funding	1
Prescribing course mentorship/support	11
Prescribing progress	1
Supervision	
Supplementary Prescribing experience	
Transition – newly qualified experience	
Awareness of prescribing courses	1
Perceptions of supplementary NMP	11
Negative impact of supplementary NMP	1

| Trust requirements for NMP | 1 |
| Trust support | 1 |

Appendix 19 – Phase 2 Initial Coding Framework

Initial Code	Description	1	2	3	4	5	6	7	8	9	10	11
Accountability	Sense of accountability in px			2	1		1	1			2	
Autonomy	View of effect on autonomous working	2										
Clinical environment effect	How the clinical area / speciality affects ability to / prescribing need.	3	4			5						1
Clinical environment, move	"Move" not moved to include done or planned	1	1			2	4	1				
Colleagues supportive	General support from colleagues		6	4	7	4	2	5	11	4	4	
Colleagues supportive others	General support from colleagues, a/c of others experience	1										
Colleague support needed	Recognise that support would be valued	13	2				3			1	1	
Colleague support not reliable	Unsure if support would be available						2					
Colleagues not supportive	Support absent rather than actively unsupportive.						3	1				
Colleagues not supportive effect	Not supportive limits px ability.	2										
Colleague understanding of role	Colleagues shown they understand the scope / role of the prescriber				6	1	2		1			3
Complexity	Referring to complexity of role	1								2		
Confidence, self	Confidence in own practice inc NQ	10	6	1	3	7	7	2	5	3	8	4
Confidence in colleagues	Confidence, or lack of, in who they work with		1				2					1

Initial Code	Description	1	2	3	4	5	6	7	8	9	10	11
Confidence next px	Confidence in next new pxs					1		1				
Competency Framework	Use or non-use of competency framework.	5	2	3	2	1		2		3	2	
Competing demands on time	Multiple causes of duties taking time form px								4	4		
Communication needed	Value of communication around px role						1		3			
CPD access	Ability to engage in CPD		1			2				1	4	
CPD confidence	Effect of CPD on confidence to px								1			
CPD delivers	Involved in delivering CPD			1							1	
CPD funding	If CPD funding available or not		1							1		
CPD in house	CPD provision by employer				2		1			2	1	
CPD lacking	Not accessed CPD (any reason)	4										
CPD needed	Would like to have some / more CPD	4	3				4				1	1
CPD negative	Poor experience of CPD		1			1						
CPD positive	Good experience of CPD			1	2	3			1		2	
CPD Px specific	CPD focused on px					1	1				1	
CPD rationale	Reasons CPD needed						1		1			
CPD, subjects	Subjects covered in CPD			1	2	3				1		
Division of px role /responsibility	Individual unable to complete px process on their own		1	2					2			
Delay effect	Effect of delay between qualifying and first prescribing		1			4			1			3
Education, support	Support not / given during course		4				1	1				9
Education, same SP & IP	IP and SP course identical (V300)		1	2	3				5			
Emotional negative	Negative feelings	2	4	2	2	4	2		11	1		
Emotional positive	Positive feelings					2		1	6	1		1
Errors cause	Factors caused px errors			1		1						

Initial Code	Description	1	2	3	4	5	6	7	8	9	10	11
Errors cause others	Factors caused px errors by others							1				
==Errors== made	If px error made or not	3	1	1	2	4		1		2	1	
Errors made, others	If px error made or not, by others			2				3				
Errors effect	Post-error effect on individual	4		1	2	4		4		4	2	
Errors effect others	Post-error effect on individual, others							2		1		
Errors feedback	Post-error feedback given				1	4		1		1		
Errors feedback, others	Post-error feedback given, others experience		1					1				
Errors, worry	Possibility of making an error			1			1			1		
Errors, worried about, others	Concern about possibility of making an error, others experience							1				
Expectation, others	What others expect of the individual	1	4		1		5	1				4
Expectation, self	What individual expects of themself	2	1	1	1		3					
Experience effect	Changes with increased px experience									1	4	
Experience pre-px	Practice prior to qualifying px		1	1	2	1				1	2	1
IP for CMP needed	Need an IP to sign off CMP						2		3			
Knowledge, colleagues	Clinical / px knowledge colleagues have						3		1			
Knowledge, self	Clinical / px knowledge self has						4	1	1	1	4	
Law, change needed	Law needs to change to remove barriers		2	4	2	2	2		3			
Law, requirement	Legal requirement cited							1	2			
==Motivation== compulsory	Compelled to take course		1							2	1	
Motivation compulsory others	Compelled to take course, other people					1		1				
Motivation future proofing	Reason for undertaking px course				1							

Initial Code	Description	1	2	3	4	5	6	7	8	9	10	11
Motivation identified need	Reason for undertaking px course							1				
Motivation – new skills	Reason for undertaking px course	1	1			1	1		1			1
Motivation - opportunity	Reason for undertaking px course	1	1			1	2		1	1		
<mark>Never prescribed</mark>	Not prescribed since qual, reasons						5		1			6
Never prescribed, others	Not prescribed since qualifying, other people	2		3				3				3
NHS			1					1				
Organisations funding	Funding issues from employer						3					
Organisation, lack of preparation	Employer not anticipated accommodations need once qualified			3		3	1		1			
Organisation systems effect	Employers processes, logistical or technological systems effect	2	1	3	1	2					5	
Organisation systems effect, others	Employers processes, logistical or technological systems effect another's experience						1					
Organisation not understanding role	Employer not understanding scope of px or clinical role									1		
Pandemic	Effect of working in pandemic		2	3	5		1			2		2
Pay	Consideration of pay after qualifying						1					4
Personal, lack of preparation	Personally not anticipated accommodations need once qualified								2			
Prescribing decision making	Process of example of decision making							2				
Prescribing, drugs	Examples of drugs in scope of practice	1		1	1			1			2	
Px prepared	Prepared for role when qualified											3

Initial Code	Description	1	2	3	4	5	6	7	8	9	10	11
Prescribing skills	Identified skills needed for safe px							1				
Prescribing limitation	Factors that limit ability to prescribe		5			2				1		
Prescribing role contribution	How their prescribing role contributes to the team and patients	2	1	2	5	1		3		3	2	1
Prescribing role question if needed	Questioning need for px role at any point	4					2					6
Prescribing required for job	Told needed to undertake px course to get / keep job								2	3	2	
Prescribing useful for job	Individual finds ability to px enhances job											
Profession	Clinical profession	1	2	1	1	1	1	1	1	1	1	1
Professional body	Professional college comments								2			
Profession specific experience	Experience due to individual's clinical background	5	4	9	7	2			6			5
Profession specific, others	Experience due to individual's clinical background, other people				1							
Qualification	Prescribing qualification	1	1	1	1	1	1	1	1	1	1	1
Qualified time, px	How long been qualified px	2	3	2	1		1	1	1	1	1	1
Qualification V100	Value of V100							2				
Registration	Issue of record of px qualification						2					
Registration monitoring	Monitoring of prescribing by regulatory body	3					2					
Risk	Risks in prescribing	7	1	4	4	7	11	12	2	11	11	2
Scope of practice	Clinical area of practice and breadth of prescribing	6	4	4	4	2	5	6	6	7	2	2
Scope of Practice – ACP role	Clinical area of practice and breadth of advanced clinical practice		6			4		3	5	1	5	

Initial Code	Description	1	2	3	4	5	6	7	8	9	10	11
Scope of practice, expand	Thoughts about expanding px role	5	1	2	2	3	1	3		3	4	2
Scope of Practice - others	Thoughts about expanding px role, other people	1								1		
Self-responsibility	Taking responsibility for own practice	2	1	1		2	2				1	
Short-staffed	Effect of short staffing		2	1	1	1			7	10		1
Supervision	Access to clinical / px supervision		2	2	5	6	1	6	1	6	4	1
Supervision methods	Different ways supervision given	1	1	2	1			1		1	3	
Supervision needed	Feels needs some / more supervision	6	5			2	2					4
Supervisor	Who does / could give supervision		1	1			1	5				1
Supp. Prescribing - barrier	Supplementary px a barrier to actually prescribing			6	4		3		2			
Supp. Prescribing – colleague understanding role	Colleagues understanding, or not, supplementary prescribing				1				1			
Supp. Prescribing – extra work	SP creates more work			3	1		1		6			
Supp. Prescribing – lack of use	SP not used, various reasons	1	1			1	1		2	1		
Supp. Prescribing - positive	Positive experience of using SP				1		1			2		
Supp. Prescribing – organisation delays	Delays in setting up process from organisation								2			
Supp. Prescribing - organisation lacks knowledge	Organisation not understanding SP								6			
Supp. Prescribing – unneeded	Opinions SP not a useful qualification			4		1			2			

Initial Code	Description	1	2	3	4	5	6	7	8	9	10	11
Transition – anticipated	What is wanted when starts to prescribe						6		5			1
Transition – newly qualified	Experience of starting to prescribed when newly qualified	1	1	2	4	5		2		2	5	
Transition – next students	Opinions of what needed to help next newly qualified prescribers			5		3		2		1	2	
Workload, team		1							1			
Workload, own				1					1	2		1
Round 2	Additional codes	2	3	3	2	1	0	0	0	0	0	0
Round 3	Additional codes	0	0	0	0	0	0	0	0	0	0	0
Round 4	Frequencies – corrections made	4	1	2	0	1	2	0	3	3	0	3
Round 5	Frequencies – corrections made	0	0	0	0	0	0	0	0	0	0	0

Round 2 = checking all codes in relevant interview

Round 3 = checking all codes in relevant interview

Round 4 = Checking count of occurrences is correct.

Key

Yellow	Deductive code
Blue	Not present in interview
Px	Prescribing / prescriber

- Supervision appraisals merged into Supervision methods
- Confidence worse (delay) merged into Delay effect

- Confidence NQ merged into Confidence self as only 1 participant mentioned this specifically. Others had mentioned the progression.
- IP for CMP needed (non-doctor) changed into Law, requirement

Appendix 20 – Final Coding Framework and Theme Development

Key

Yellow	Deductive code
Blue	Not present in interview
IP	Independent prescriber
NQ	Newly qualified
Px	Prescribing / prescriber
SP	Supplementary prescriber

Phase 2: Coding

Collapsing codes – Round 1 (98 codes down to 93 codes)

Old Code	Action	New Code	Rationale
Confidence worse (delay)	Merged	Delay effect	Duplicate data capture
Confidence when NQ	Merged	Confidence, self	Only 1 participant mentioned this specifically. Others had discussed the progression of confidence over time
Competing demands on time	Merged	Workload, own	Similar data capture
CPD confidence	Merged	CPD positive	Didn't make sense to separate confidence from other positive aspects of CPD
CPD lacking	Merged	CPD access	Duplicating the data capture
Education same SP/IP	Changed	SP education same IP	This was changed as particular to supplementary prescribers
IP for CMP needed	Changed	SP, IP needed	This was changed as particular to supplementary prescribing
IP for CMP needed (non-doctor)	Changed	Law, requirement	The matter of significance is the legal requirement of who can be IP on CMPs
Supervision appraisals	Merged	Supervision methods	No sense in separating appraisals form other methods of supervision

Collapsing codes – Round 2 (93 codes to 23 codes)

Old Code	Action	New Code	Code No.
Law, change needed			
Supp. Prescribing – colleague understanding role			
Supp. Prescribing – Education same IP			
Supp. Prescribing – extra work			
Supp. Prescribing – IP needed			
Supp. Prescribing – lack of use			
Supp. Prescribing – organisation delays			
Supp. Prescribing - organisation lacks knowledge			
Supp. Prescribing – positive			
Supp. Prescribing – unneeded	Merged	==Supp. Prescribing==	1
CPD access			
CPD delivers			
CPD funding			
CPD in house			
CPD needed			
CPD negative			
CPD positive			
CPD Px specific			
CPD rationale			
CPD, subjects	Merged	==CPD==	2
Clinical Environment effect			
Clinical Environment move			
Short-staffed			
Workload, others			3
Workload, own	Merged	Clinical environment	
==Motivation== compulsory			
Motivation compulsory others			

Motivation future proofing			
Motivation identified need			
Motivation – new skills			
Motivation - opportunity			
Prescribing required for job	Merged	==Motivation== to undertake px	4
Colleagues supportive			
Colleagues supportive others			
Colleague support needed			
Colleague support not reliable			
Colleagues not supportive			
Colleagues not supportive effect			
Colleague understanding of role	Merged	Colleagues	5
Communication needed			
Organisations funding			
Organisation, lack of preparation			
Organisation systems effect			
Organisation systems effect, others			
Organisation not understanding role	Merged	Organisational Factors	6
Division of px role / responsibility			
==Errors== cause			
Errors cause others			
Errors effect			
Errors effect others			
Errors feedback			
Errors feedback others			
Errors made			
Errors made others			
Errors worry			
Errors worry others			

Risk	Merged	Errors	7
Supervision			
Supervision methods			
Supervision needed			
Supervisor	Merged	Supervision	8
Complexity			
Knowledge colleagues			
Knowledge self			
Prescribing, drugs			
Scope of practice			
Scope of practice others			
Scope of practice ACP			
Scope of practice expand	Merged	Scope of Practice	9
Profession			
Profession specific experience			
Profession specific, others	Merged	Profession specific experience	10
Qualification			
Qualified time, px			
Qualification V100	Merged	Qualification	11
Transition – anticipated			
Transition – newly qualified			
Transition – next students	Merged	Newly Qualified	12
Never px			
Never px others	Merged	Never prescribed	13
Competency Framework	No change	Competency Framework	14
Accountability			
Autonomy			
Professional Body			
Registration			

Registration monitoring	Merged	Accountability	15
Experience pre-px			
Education support			
Px prepared	Merged	Prepared for prescribing role	16
Pay	No change	Pay	17
Prescribing decision making			
Prescribing skills			
Px role contribution			
Px role question if needed	Merged	Px role contribution	18
NHS			
Pandemic	Merged	National circumstances	19
Confidence, self			
Confidence in colleagues			
Confidence next px			
Delay effect			
Expectations, others			
Expectations, Self			
Experience effect	Merged	Confidence	20
Emotional negative			
Emotional positive	Merged	Feelings about Prescribing	21
Law, requirement			
Prescribing limitation	Merged	Legal Governance	22
Self-responsibility			
Personal lack of preparation	Merged	Personal responsibility	23

Coding Framework

Codes	Description
Accountability	Sense of accountability in px
Clinical environment	How the clinical area / speciality affects ability to / prescribing need.
Colleagues	General support from colleagues
Confidence	Confidence in own practice including when NQ
Competency Framework	Use or non-use of competency framework.
CPD	Ability to engage in CPD
Errors	Risks in prescribing
Feelings about Px	Indicates all emotional responses to prescribing experiences and circumstances
Legal Governance	Law needs to change to remove barriers
Motivation	Compelled to take course
Never prescribed	Not prescribed since qual, reasons
Newly Qualified	Relates to experiences when they were newly qualified
National Circumstances	NHS and pandemic effects
Organisational Factors	Logistical and systematic influences of their Trust / workplace
Pay	Consideration of pay after qualifying
Personal responsibility	Personally not anticipated accommodations needed once qualified
Px prepared	Prepared for role when qualified
Prescribing role contribution	How their prescribing role contributes to the team and patients
Profession specific experience	Clinical profession
Qualification	Prescribing qualification
Scope of practice	Clinical area of practice and breadth of prescribing
Supervision	Access to clinical / px supervision
Supp. Prescribing -	Supplementary px a barrier to actually prescribing

Phase 3: Generating Candidate Themes.

Codes	Description	
Confidence		
Feelings about Px	Attitudes to Prescribing	
Profession specific experience		
Prescribing role contribution	Professional background experiences	
Qualification	Prescribing qualification	**Professional Variance**
Accountability		
Errors		
Personal responsibility	High Risk Activity	
Competency Framework		
CPD	Ongoing Support Resources	
Legal Governance	Specific Legal Requirements	**Regulatory Frameworks**
Clinical environment		
Colleagues		
Supervision	Team	
Pay		
Organisational Factors	Wider Organisational Influences	
National Circumstances	National Working Conditions	**Workplace and Colleagues**
Supp. Prescribing		
Never prescribed		
Newly Qualified	Specific Prescribing Status	
Motivation		
Prescribing prepared	Perceptions of prescribing	
Scope of practice	Scope of practice prescribing & ACP	**Prescribing Activity**

Phase 4: Developing and Reviewing Themes

Old Code	Action	New Code	Rationale
Accountability	Merged	Errors	Discussed in relation to the possibility or consequence of making an error
Clinical Environment	Merged	Demographic details	The broad areas of clinical areas represented by respondents can be given as demographic data.
Feelings	Merged	Supplementary Prescribing	Feelings expressed were largely expressed in relation supp prescribing.
Legal requirements	Merged	Supplementary Prescribing	All in relation to supplementary prescribing
Pay	Merged	Organisational Factors	Relevant comments but align to organisation
Personal Responsibility	Merged	Errors	Largely in relation to the possibility or consequence of making an error
Prescribing Prepared	Merged	Advanced Clinical Practice	Commentary about feeling prepared for prescribing or ACP aligns to ACP role overall.
Profession Specific Experience	Merged	Supplementary Prescribing	Specific advantages/disadvantages for profession largely in relation to SP

Appendix 21 – Stage 5, Refining, Defining and Naming Themes

Sub-Themes	Themes
Motivation	
Advanced Clinical Practice Role	
Prepared for Prescribing Role	**Becoming a Prescriber**
Supplementary Prescribing	
Variation According to Profession	
Never Prescribed	**Diverse nature of**
Newly Qualified	**prescribing role**
Colleagues and Support Network	
Supervision, formal and informal	
Audit and Fitness to Practice	**Supporting prescribers**
Value of Continuous Professional Development	**in practice**
Aware of Risks	
Errors	
Competency Framework	
Organisational Factors	**Social and cultural behaviour**
Confidence	**in prescribing**

Appendix 22 – Excerpt from Reflexive Journal, Coding and Theme Generation

10th January 2023

I have enjoyed the process of reflexive thematic analysis and I feel I have learned a lot. Today I was discussing my candidate themes in collaboration with one of my supervisors to refine and define my final themes. It was motivating and I got a lot of insight from working alongside an experienced researcher. I found the fresh eyes brought clarity to the process and we both identified the key points and codes and agreed how to organise them. There were points we discussed if something should be this or that, and I was able to make decisions with rationale that had been clarified by our discussion. It's always helpful to have a different perspective and I was genuinely excited where we had so many points of agreement.

I enjoy that research has very precise language, and sometimes I find it's still an effort to get there. This was something that was incredibly helpful in defining my themes, in capturing what the story was about. The feeling I had when I recognised one wasn't quite there yet but getting nearer, and the satisfaction when it was finally right. And I love how my four themes lead from one to another.