

EXPERIENCING THE RESEARCH ROLE OF THE CONSULTANT RADIOGRAPHER: A GROUNDED THEORY STUDY

*With “an intelligent overview”, can consultant radiographers overcome
the barriers hindering the core domain of research?*

Rachel Louise Harris

Submitted to the University of Exeter as a thesis for the degree of
Doctor in Clinical Research (D Clin Res).

July 2013

This thesis is available for Library use on the understanding that it is
copyright material and that no quotation from the thesis may be
published without proper acknowledgement.

I certify that all the material in this thesis which is not my own work has
been identified and that no material has previously been submitted and
approved for the award of a degree by this or any other University.

Total word count including all text and tables,
but excluding references and bibliography = 49,710

Experiencing the Research Role of the Consultant Radiographer

ACKNOWLEDGEMENTS

With grateful thanks to the following for their support with this thesis.

My husband, Trevor, for his patience, support, being my 'sounding board', and for his encouragement during the difficult phases.

Love to my special Mum and Dad, Rosamund and Clark, for being my constant foundation and for giving me precious 'time out'.

My supervisor, Dr Anke Karl, and qualitative adviser, Dr Janet Smithson, and my field collaborators, Professor Audrey Paterson, Dr Karen Knapp, and Dr Heidi Probst for their sound advice, help, and infinite words of wisdom.

The Society and College of Radiographers for their assistance and facilities in the project management and in particular Professor Audrey Paterson for making all this possible and for giving me the drive to continue. Professor Paterson has been an enduring source of inspiration throughout my personal journey as a researcher.

Finally, and not least, a very big thank you indeed to all the consultant radiographers who participated in the study and gave me their time, perspectives, and cooperation.

ROLES OF SUPERVISORY TEAM

Dr Anke Karl – allocated student supervisor by the University of Exeter.

Professor Audrey Paterson – workplace supervisor and mentor.

Dr Karen Knapp – adviser for questionnaire design and analysis.

Dr Heidi Probst – adviser for interview analysis.

Dr Janet Smithson – grounded theory adviser.

ABSTRACT

Aim

The aim of this study was to explore what the core domain of research means to consultant radiographers in clinical practice and to identify the key factors that facilitate or hinder research activity by this staff group.

Design

Grounded theory research methodology was employed.

There were three phases to the study:

- Literature review.
- Electronic questionnaires to all those in consultant radiographer posts as identified by the Society and College of Radiographers consultant radiographer network.
- Twenty five consultant radiographers invited for telephone interview.

Results

Results indicate there are variations across clinical specialties as to the amount and level of research undertaken by consultant radiographers.

The principal barriers revealed were: lack of time; excessive clinical workload; lack of skills and confidence to undertake research; poor research culture; and lack of support.

The main facilitators noted were: dedicated time, research training and up-skilling; mutually beneficial collaborations; managerial understanding of the research domain of the role; and research focussed on clinical demand.

Conclusion

Research is one of the four core domains of consultant allied health professional and nursing roles but, as yet, it is not fully embedded into those of all consultant radiographers. Many consultant radiographers appear to spend more of their time on the 'clinical expert' element of their role at the expense of the research domain.

Experiencing the Research Role of the Consultant Radiographer

This research identified factors, from the consultant radiographers' perspective, that both support and hinder research and suggests that, with 'an intelligent overview', some of barriers could be overcome. This study concludes that there is an urgent need for consultant radiographers to understand why research is one of the four core domains and to recognise the need to embed research into their clinical practice.

Word count 282/300

LIST OF CONTENTS

CHAPTER 1: INTRODUCTION AND BACKGROUND LITERATURE

Pages:15-36

- 1.1 Introduction to the project
- 1.2 Introduction to chapter
- 1.3 Initial literature review
 - 1.3.1 Background to the consultant practitioner roles
 - 1.3.2 The role of a consultant radiographer: problems in practice
 - 1.3.3 Research and the radiography profession: semi-professional, emerging or professional?
 - 1.3.4 Who will lead research for the profession?
 - 1.3.5 What is the future for radiographic research? why this study is timely
- 1.4 Summary of chapter

CHAPTER 2: METHODOLOGY AND STUDY DESIGN

Pages:37-72

- 2.1 Introduction to chapter
- 2.2 Aims and objectives of the study
- 2.3 Research philosophy and approach
- 2.4 Research strategy: grounded theory
- 2.5 Data collection methods
 - 2.5.1 Search process
 - 2.5.2 Method choices
 - 2.5.3 The Questionnaire
 - 2.5.4 The Interviews
- 2.6 Study Execution
 - 2.6.1 Introduction
 - 2.6.2 Questionnaire section
 - 2.6.2.1 User involvement

Experiencing the Research Role of the Consultant Radiographer

- 2.6.2.2 Previous studies
- 2.6.2.3 Final questionnaire construction
- 2.6.2.4 The questionnaire data collection
- 2.6.2.5 Questionnaire analysis
 - 2.6.2.5.1 Initial analysis of questionnaire
 - 2.6.2.5.2 Detailed analysis of questionnaire
- 2.6.3 Interview section
 - 2.6.3.1 Coding of interviews
 - 2.6.3.2 Themes and theoretical categories
 - 2.6.3.3 The emergence of a theory
- 2.7 Quality criteria
 - 2.7.1 Acceptability of evidence
 - 2.7.1.1 Credibility
 - 2.7.1.2 Originality
 - 2.7.1.3 Resonance
 - 2.7.1.4 Usefulness
 - 2.7.2 Reflexivity
- 2.8 Ethical considerations
 - 2.8.1 Research approval
 - 2.8.2 Data protection
- 2.9 Profile of Participants
 - 2.9.1 Questionnaire
 - 2.9.2 Interviews
- 2.10 Summary of chapter

CHAPTER 3: RESULTS - QUESTIONNAIRE

Pages:73-104

- 3.1 Introduction to chapter
- 3.2 Main Results - Questionnaire
 - 3.2.1 Section 1: Demographics and background information
 - 3.2.1.1 Length of time in-post
 - 3.2.2 Section 2: Research knowledge base
 - 3.2.2.1 Qualifications

Experiencing the Research Role of the Consultant Radiographer

- 3.2.2.2 Level of research involvement
- 3.2.2.3 Training and ability
- 3.2.3 Section 3: Research activity
 - 3.2.3.1 Time allocation for research
 - 3.2.3.2 Research as a core domain
- 3.2.4 Section 4: Research publication and presentation
 - 3.2.4.1 Publications
 - 3.2.4.2 Effect of research on practice
- 3.2.5 Section 5: Opinion
- 3.2.6 Section 6: Research support
 - 3.2.6.1 Aids to successful clinical research
 - 3.2.6.2 Barriers to research
 - 3.2.6.3 Culture and impact
- 3.3 Summary of chapter

CHAPTER 4: RESULTS - INTERVIEWS

Pages:105-168

- 4.1 Introduction to chapter
- 4.2 Main Results - Interviews
 - 4.2.1 The Role
 - 4.2.1.1 Research as a core domain
 - 4.2.1.2 Leadership, control and autonomy
 - 4.2.1.3 The clinical role
 - 4.2.2 Qualifications and Training
 - 4.2.2.1 Research capability
 - 4.2.2.2 Lack of confidence to do research
 - 4.2.3 An Understanding of Research
 - 4.2.3.1 What is clinical research?
 - 4.2.3.2 What actually counts as research?
 - 4.2.3.3 How does research affect practice?
 - 4.2.4 Research Activity
 - 4.2.4.1 Publication record
 - 4.2.4.2 Research user

Experiencing the Research Role of the Consultant Radiographer

- 4.2.4.3 Feedback to practice
- 4.2.5 Lack of Time
 - 4.2.5.1 Real lack of time
 - 4.2.5.2 Perceived lack of time
 - 4.2.5.3 Job plan
- 4.2.6 Research Collaboration
 - 4.2.6.1 Higher Education Institutions (HEIs)
 - 4.2.6.2 Other AHPs/professions
 - 4.2.6.3 Research radiographers
- 4.2.7 Support
 - 4.2.7.1 Consultant radiographer providing support to others
 - 4.2.7.2 Managerial support to consultant radiographer
 - 4.2.7.3 Other radiographers' support to consultant radiographer
 - 4.2.7.4 Clinicians support to consultant radiographer
 - 4.2.7.5 Rivalry
- 4.2.8 Research Culture
 - 4.2.8.1 None
 - 4.2.8.2 Acceptance
 - 4.2.8.3 Interaction
- 4.2.9 Professional Issues
 - 4.2.9.1 Succession planning
 - 4.2.9.2 Pushing boundaries
 - 4.2.9.3 Traditional influences
- 4.2.10 Fears and Feelings
 - 4.2.10.1 Making excuses
 - 4.2.10.2 Defensive
 - 4.2.10.3 Apologetic
 - 4.2.10.4 Concerned
 - 4.2.10.5 Feelings of inadequacies
 - 4.2.10.6 Isolated
- 4.3 Relationships across the theoretical categories
- 4.4 Core categories
- 4.5 Barriers and facilitators

Experiencing the Research Role of the Consultant Radiographer

4.6 Summary of chapter

CHAPTER 5: MAIN DISCUSSION

Pages:169-206

- 5.1 Introduction to chapter
- 5.2 Limitations and strengths of the study
 - 5.2.1 Limitations
 - 5.2.2 Strengths
- 5.3 Discussion of main results
 - 5.3.1 Does the length of time in post affect the level of research activity?
 - 5.3.2 Is the clinical aspect of the role overwhelming the other domains?
 - 5.3.3 Does the level of qualification affect involvement in research?
 - 5.3.4 Is being a research lead affected by confidence and capability?
 - 5.3.5 Does lack of time available affect the research core domain?
 - 5.3.6 Should research be a core domain?
 - 5.3.7 What is the level of research activity and publication rates?
 - 5.3.8 Does the level of support affect the research core domain?
 - 5.3.9 Is there a lack of collaboration with academia?
 - 5.3.10 Is there a lack of collaboration with other health professionals?
 - 5.3.11 Does the organisational culture affect research?
 - 5.3.12 Is succession planning in place?
 - 5.3.13 The main barriers
 - 5.3.14 The main facilitators
- 5.4 Conceptual framework
- 5.5 Summary of chapter

CHAPTER 6: SECOND REVIEW OF THE LITERATURE

Pages:207-232

- 6.1 Introduction to chapter
- 6.2 Key findings from the literature
 - 6.2.1 Understanding of the role
 - 6.2.2 Standardisation of the role with succession planning
 - 6.2.3 Mentorship and training – preparedness

Experiencing the Research Role of the Consultant Radiographer

- 6.2.4 Accreditation
- 6.2.5 Master's/Doctoral level training
- 6.2.6 Building on the professional body of knowledge
- 6.3 Synthesis of the literature
- 6.4 Summary of chapter

CHAPTER 7: SUMMARY OF WORK UNDERTAKEN AND KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Pages: 233-242

- 7.1 Introduction to chapter
- 7.2 Summary of work undertaken
 - 7.2.1 The Literature Review
 - 7.2.2 Study execution
- 7.3 Key findings
- 7.4 Recommendations
- 7.5 Conclusion

CHAPTER 8: REFERENCES

Pages:243-250

CHAPTER 9: BIBLIOGRAPHY

Pages:251-255

CHAPTER 10: APPENDICES

- Appendix 1: Literature search process
- Appendix 2: Questionnaire
- Appendix 3: Interview Guide
- Appendix 4: Sample from Interview Transcript
- Appendix 5: Gantt Chart
- Appendix 6: Ideas for questions from meeting

Experiencing the Research Role of the Consultant Radiographer

- Appendix 7: Sample of Post Interview Memo
- Appendix 8: Sample of Open Coding
- Appendix 9: Sample of Focussed Coding
- Appendix 10: Theoretical Categories and Relating Quotes
- Appendix 11: Approval Letters
- Appendix 12: Participant Information Sheet and Consent
- Appendix 13: Risk matrix
- Appendix 14: Additional free text comments from questionnaire

LIST OF TABLES

- Table 1: Distribution of Questions – page 53
- Table 2: Profile of Questionnaire Participants – page 70
- Table 3: Profile of Interview Participants – page 71
- Table 4: Length of Time In-Post– page 75
- Table 5: Types of Qualifications – page 76
- Table 6: Level of Research Involvement – *page 77*
- Table 7: Previous and Current Reason for Research Involvement – *page 78*
- Table 8: Should Research be a Core Domain? – *page 86*
- Table 9: Publication Records – *page 88*
- Table 10: Statements of Consensus – *page 92*
- Table 11: Statements of Diversity – *pages 93-94*
- Table 12: ‘My other roles are more important than research’ – *page 95*
- Table 13: Aids to Successful Clinical Research – *page 96*
- Table 14: Factors that Facilitate Good Quality Research – *page 97*
- Table 15: Barriers to Research – *page 98*
- Table 16: Impact of Research on a Department – *page 99*
- Table 17: Impact of Research to the Profession – *page 100*
- Table 18: Questionnaire Summary of Main Group Characteristics – *page 101*
- Table 19: The Ten Theoretical Categories – *page 106*
- Table 20: The Interaction of the Ten Theoretical Categories – *page 154*
- Table 21: Interview Summary of Interview Group Characteristics – *page 168*
- Table 22: Growth of Roles – *page 214*

LIST OF FIGURES

- Figure 1: Study Progression – *page 39*
- Figure 2: The Framework Approach – *page 56*
- Figure 3: Changing Practice – *page 78*
- Figure 4: Training and Ability – *page 79*
- Figure 5: Time Allocation for Research – *page 82*
- Figure 6: Should Research be a Core Domain? – *page 85*
- Figure 7: Publications – *page 87*
- Figure 8: The Relationship of the Ten Theoretical Categories – *page 155*
- Figure 9: The Core Categories – *page 159*
- Figure 10: The Potential Barriers to the Research Core Domain – *page 163*
- Figure 11: The Potential Facilitators to the Research Core Domain – *page 165*
- Figure 12: The Conceptual Framework – *page 201*
- Figure 13: Individual Attributes – *page 203*

CHAPTER 1

INTRODUCTION AND BACKGROUND LITERATURE

1.1 INTRODUCTION TO THE PROJECT

The aim of this study was to explore what the core domain of research means to consultant radiographers in clinical practice and to identify the key factors that facilitate or hinder research activity by this staff group.

There were three stages to the work: a literature review; a questionnaire; and semi-structured interviews.

The thesis will move through these stages and use the combined results to form recommendations as to how to increase research activity by this group of staff.

1.2 INTRODUCTION TO CHAPTER

The literature review was undertaken in two parts.

Prior to the start of the project the literature was examined to gather background information about consultant practitioner roles in the allied health and nursing professions. This chapter discusses the findings from that background foundation

Experiencing the Research Role of the Consultant Radiographer

and what is already documented in the literature about the roles of consultant radiographers.

A second in-depth review of the literature was undertaken after the data collection stages to explore the research core domain in more detail, and to compare previously documented problems experienced by consultant practitioners with the study results. The second review will be discussed in Chapter 6.

This chapter concludes by considering why research is required for the radiography profession, the need for consultant radiographers to be involved in leading research, and why this work is timely.

1.3 **INITIAL LITERATURE REVIEW**

1.3.1 **Background to consultant practitioner roles**

In recent years, governments have stressed the requirement for clinical frontline staff to be able to deliver high quality evidence-based care and have realised the potential of non-medical staff taking on higher levels of responsibility. In 2000, the Department of Health (DH) published '*Meeting the Challenge: a Strategy for the Allied Health Professions*' and '*The NHS Plan*' (DH, 2000a, 2000b); both documents proposed future role development opportunities for allied health professions (AHPs). The NHS Plan specifically:

Experiencing the Research Role of the Consultant Radiographer

“... promotes cross boundary working, allows for the removal of traditional demarcations and more flexible working practices.”

Woodford (2006), page 324

The role of the consultant allied health professional (AHP) practitioner was thus first described with the expectation that these posts will improve patient outcomes by ensuring strong professional leadership and change-management facilitation. It was emphasised that these individuals should possess highly specialised knowledge and be working at the forefront of their field. They should be leaders able to “*analyse complex processes*” (Skills for Health, 2011, page 6), demonstrating high levels of autonomy (McCaughan, Thompson, Cullum, et al., 2002; Milner, Estabrooks & Humphrey, 2005) and be “*knowledge brokers*” (Gerrish, Guillaume, Kirshbaum, et al., 2007, page 1), and:

“... through clinical leadership to act as change agents in promoting evidence-based care amongst front-line staff.”

Gerrish, Guillaume, Kirshbaum, et al. (2007), page 1

Notwithstanding the recognition that frontline staff have an obligation to base practice in evidence, early reviews of consultant AHP and nursing roles often noted a lack of organisational support for those leaders in the field (Bryar, Cross, Baum et al., 2003). Significantly, Gerrish, Guillaume, Kirshbaum, et al. (2007) reflected that little is known about the approaches that clinical leaders take to promote evidence-based practice and that impact on care and frontline clinical activity is not well documented.

Experiencing the Research Role of the Consultant Radiographer

1.3.2 **The role of a consultant radiographer: problems in practice**

The '*Advance Letter*' (DH, 2001) specified the requirement of four core domains of the consultant AHP and nursing role, which, to date, stand unchanged, these are:

- Expert clinical practice;
- Professional leadership and consultancy;
- Practice and service development, research and evaluation;
- Education and professional development.

The '*Advance Letter*' (DH, 2001) indicated that 'expert clinical practice' requires a minimum of 50% clinical focus; however, the other three core functions do not have any allocated weighting (Hardy & Snaith, 2006). Ford (2010b) suggested that all those early into consultant radiographer posts felt the clinical practice element of their role was the priority, and for many the creation of their role was driven by: the necessity to meet government waiting-list targets; a recognition that there was a shortage of radiologists to cover the demanding workload (RCR, 2002; Law, 2006); and to meet local service needs (Kelly, 2010).

The consultant practitioner role is expected to challenge traditional ways of working and influence at a strategic and interprofessional level. In reality, Humphreys, Johnson, Richardson, et al. (2007) commented in their study on a lack of role clarity, which placed an unrealistic expectation on the work capacity of individuals. In addition, they noted that many of the consultant practitioner posts have developed in an ad hoc person-related manner, rather than a post-related one.

Experiencing the Research Role of the Consultant Radiographer

The significant increase in imaging requirements in the last decade, combined with low radiologist numbers that have not increased sufficiently to cope with the imaging demand, have resulted in a shift in service requirements to broaden the roles and skills of radiographers (CoR, 2008; Miller, Price, & Vosper, 2011). The '*National Radiography Skills Mix*' Project (DH, 2003) was instigated owing to the shortage of radiologists, oncologists, and radiographers, whilst recognising an increasing demand for imaging and cancer treatments. Ford's (2010b) study also highlighted that many consultant radiographer roles were indeed created owing both to a shortage of radiologists and in order to meet clinical targets. Woodford (2006) felt this offered an opportunity for individuals and the profession.

However, the NHS Breast Screening Programme '*New Ways of Working*' Report (Nickerson & Cush, 2004) evaluated the implementation of the four tier structure, and one significant finding was that no units at that time had employed a consultant radiographer. Proposed reasons for this were the vast scope of the role and a lack of direction on upgrading those in existing posts.

Woodford (2006) remarked that: "*implementation of the four tier system has been haphazard with a lack of uniformity*" (page 325) and considered that perhaps a few had avoided clinical specialist roles as they were waiting for these to be upgraded to consultant posts. Suggested barriers she proposed were:

"The lack of interest in consultant posts, the amount of autonomy given to those in a consultant position, the effect on superintendent positions and the possible effect on demand for radiologists are just a few of many issues that require investigation."

Woodford (2006), page 325

Experiencing the Research Role of the Consultant Radiographer

Price and Le Masurier (2007) reflected a strong need to increase the numbers in consultant roles as they should be providing leadership for the other staff. Therefore, they called for an investigation to discover why consultant radiographer numbers remain so low.

The '*Scope of Radiographic Practice*' Report (CoR, 2008) discussed the necessity for advanced and consultant practitioners, but suggested that the core duty of clinical practice was being undertaken to the detriment of the other domains. The audit of Consultant AHP practice by Turnpenney (2003) found that radiographers spend more time undertaking the 'clinical expert' part of their role than other AHPs.

If consultant radiographers are to be:

"... strategic independent creative thinkers who are advancing research and education to practice."

College of Radiographers (2002), page 8

who:

"... will play a pivotal role in the integration of clinical practice, education and research findings."

College of Radiographers (2003), page 5

then the lack of a designated minimum time allocation for the research element of the role needs investigation to determine if it is causing problems in practice.

In his guest editorial for *Radiography*, Ford (2010a) championed the prerequisite that the profession as a whole should recognise the consultant radiographer as more

Experiencing the Research Role of the Consultant Radiographer

than an expert clinical practitioner. Whilst he appreciated the clinical role is key, he espoused that consultant radiographers must fulfil the other core domains if they are not to be viewed solely as advanced practitioners or clinical specialists. He noted the opposition for consultant posts to be 50% clinical and argued this comes from a poor understanding of the *raison d'être* for the other core domains. In particular, he noted there was little research being undertaken by consultant radiographers and most of their study was for reasons of continuing professional development. He discussed that in some cases consultant radiographer posts have been limited in their scope owing to reluctance by managers to allocate suitable resources, particularly in the research domain, and asked:

“Is this lack of innovation purely due to financial pressures and the inability to emerge from the relentless pressures of service delivery, or is there an element of professional jealousy and lack of vision?”

Ford (2010a), page 6

Interestingly, in their study of consultant nurse practice, Burton, Bennett and Gibbon (2009) noted that the ‘clinical expertise’ domain was more widely viewed as service development rather than necessarily hands-on clinical. Perceptions in radiography at a similar period of time appeared to be different, as per:

“The roles are not meant to be purely clinical, merely to plug a radiological need, nor are they primarily managerial in nature ... Current workloads within Trusts have meant that a number carry a 70% clinical weighting, with pressure to devote even more time to that element, risking the other elements of the post not being given sufficient attention.”

Kelly, Piper and Nightingale (2008), page e76

Experiencing the Research Role of the Consultant Radiographer

The Skills for Health '*Nationally Transferable Roles Template*' (Skills for Health, 2011) stated that the 'expert practice' domain should normally involve up to 50% of the consultant practitioner's time. However, it was also very clear that research is a core component of the role, confirming:

"... research and development are an integral component of the role. Research, by original work or the work of others, is used to improve quality, as a basis for innovation and service development and improvement."

Skills for Health (2011), page 5

In addition, the document raised the expectation that:

"... as a recognised leader in the field of work the consultant practitioner will be engaged in publishing their work either through peer reviewed journals or by presenting at national and international conferences."

Skills for Health (2011), page 6

There may also be a misconception that advanced practitioners can easily move into consultant posts; however, the role involves rather more than simply an extension of clinical skills. Cowling's (2008) article further compounded any confusion regarding the title roles of consultant and advanced practitioner, as she described a: *"consultant radiographer (is) defined as the most advanced practitioner"* (page e28).

White and McKay (2004) were of the opinion that role development is important to ensure *"that the interests of the profession are safeguarded"* and that radiographers are not *"merely technical assistants for the medical profession"* (page 220). The shortage of radiologists and oncologists in the UK may have reduced any resistance towards radiographers extending their roles, as the medical professions appreciated the necessity for collaborative working and the breaking-down of the traditional

Experiencing the Research Role of the Consultant Radiographer

boundaries as they “*gradually loosen their grip on various clinical tasks*” (Ibid). However, it is still largely the medical professions that are “*empowered to make the major decisions which impact on health care provision*” (Ibid).

Given the anecdotal evidence that the core domain of research is not being fulfilled the next sub-section considers the implications for the profession.

1.3.3 Research and the radiography profession: semi-professional, emerging or professional?

In 1991, the Department of Health published its first document underlining the requirement for both evidence-based health care and rigorous standards of practice within the health professions (DH, 1991). In support The Society and College of Radiographers (SCoR) developed its first ‘*Strategy for Research*’ for the profession in 1994, highlighting the precondition that all radiographers use evidence and knowledge based care (CoR, 1994).

There is a consensus of opinion that qualified practitioners at all levels must be able to read, comprehend and utilise research findings, and expand the professional body of knowledge (Price, 1994; Sim & Radloff, 2009) such that:

“An important aspect of professionalisation is the continuous growth of professional knowledge through ongoing research conducted by members of the profession.”

Sim and Radloff (2009), page 205

Despite numerous governmental and professional publications, indicating that research and audit must be conducted in clinical practice, radiographers have often

Experiencing the Research Role of the Consultant Radiographer

been referenced as being less research active than their AHP and nursing peers (P. Williams, 2002; Gambling, Brown, & Hogg, 2003; Upton & Upton, 2006).

Radiography:

“... must not continue to be simply an uncritical consumer of research, but needs to generate and evolve its own knowledge base.”

Manning and Bentley (2003), page 4

Radiography often uses knowledge obtained by other members of the health professional team and has been perceived by some as ‘semi-professional’ or an ‘emerging profession’ as its own body of knowledge is, customarily, subjectively based (Challen, Kaminski, & Harris, 1996; Nixon, 2001; Adrian-Harris, 2006). This:

“... implies that the discipline of radiography and its practitioners aspire to be deemed as truly professional but, in some way, fall short of meeting all the entrance requirements for this accolade.”

Adrian-Harris (2006), page 46

Traditionally, radiologists and oncologists have led research in the radiography and oncology disciplines and there is now a challenge for radiographers to undertake this role (Yielder & Davis, 2009). Indeed, Bolderston (2005) proposed that radiographers in advanced and consultant roles may ‘upset’ the traditional medical hierarchy of power and that being unable to undertake research, or develop their roles, may be owing to the influence of others. Yielder and Davis (2009) even described radiography as a “*subordinated profession*” because:

“... power is intrinsically linked to professional autonomy, which means that if one profession maintains an accepted hierarchal position, control in the practice of another, then the resulting monopoly will create conflict.”

Yielder and Davis (2009), page 346

Experiencing the Research Role of the Consultant Radiographer

Additionally, Yelder and Davis (2009) discussed the resistance to research in radiography that may be associated with these subordinate conforming roots of the profession, where radiographers are not encouraged to question or to think critically, and this has stifled its growth. They described radiography as an 'emerging profession', as it is still not fully achieving the three main characteristics of a profession which are: expertise, credentialism and autonomy. Sim and Radloff (2009) were also of the opinion that:

“Medical dominance has ensured that radiographers and radiation therapists remain subordinate to both radiologists and oncologists.”

Sim and Radloff (2009), page 204

Indeed, Ottenbacher (1990) described radiographers as 'passive technicians' and emphasised that they must step up to the professional status. Hafslund, Clare, Graverholt, et al. (2008) also commented that this issue has been compounded by traditional practice and subjective knowledge, which have both often been the norm in radiography and that:

“... the use of research-based evidence and knowledge based on critically assessed evidence is lacking.”

Hafslund, Clare, Graverholt, et al. (2008), page 344

The College of Radiographers 'Education and Professional Development Strategy' (CoR, 2010a) stressed the obligation for having a research base to the profession and the necessity for clinical radiographers to have audit and research skills. As such, the document expected service managers to help ensure that a receptive research culture exists in the clinical setting.

Experiencing the Research Role of the Consultant Radiographer

In October 2005, the College of Radiographers published its second, more detailed, research strategy: *'Research and the Radiography Profession: A Strategy and Five Year Plan'* (CoR, 2005c). This was perhaps an overly ambitious document for the time, and in conjunction with *'The Career Progression Framework'* (CoR, 2002), set out expectations for the appreciation and use of substantiated research involvement by all levels of practitioner. The current *'Research and the Radiography Profession'* (CoR, 2010c) Strategy has attempted to provide radiographers with more assistance to undertake research. The strategy document cites a number of reasons for radiographers not undertaking research; the main ones being a lack of:

- Capacity;
- Capability;
- Funding.

Given the issues raised the next sub-section debates who will and can lead research for the profession.

1.3.4 Who will lead research for the profession?

The consultant radiographer:

"... is likely to play a pivotal role in promoting the clinical research agenda by providing leadership and/or engaging directly in the process itself."
Lee, Gambling and Hogg (2004), page 70

Consultant radiographers are likely to be upgraded from previous advanced practitioner positions so they should already be 'high-end' clinical specialists, but the consultant practitioner:

Experiencing the Research Role of the Consultant Radiographer

*“... requires greater clinical expertise and greater strategic acumen and vision.”
Price and Edwards (2008), page e66*

Effective leaders should have the ability to implement change, be setting the direction and “*shaping the future*” (Hogg, Hogg, & Henwood, 2008), and be able to:

*“... create a vision; devise a strategy implementation, identify problems and solutions; build capability and inspire others to achieve higher standards.”
Hogg, Hogg and Henwood (2008), page e41*

Hogg (2011) clarified that a transformational leadership style helps overcome resistance to change as it enables others to take the initiative. This inclusivity is important because research and development do not take place in a “*void*”. The changing of a team and professional culture is warranted and leaders should:

*“... help teams to develop and sustain a shared vision of the future evolution of the profession. The ability to empower others to share the dream and implement change is critical to the advancement of any discipline.”
Lee, Gambling and Hogg (2004), page 70*

However, the paper on transformational leadership behaviours by Wylie and Gallagher (2009) suggested that radiographers and podiatrists perform consistently lower in their transformational leadership behaviours and skills than other AHPs. Therefore, they proposed that radiographers are disadvantaged, as they are more likely to conform to a regulated environment and may find change difficult.

The consultant radiographer should be in a position to lead the profession forward. They should have a commitment to both practice and service development, and the

Experiencing the Research Role of the Consultant Radiographer

foresight to train and develop others; thereby ensuring succession planning for the future (CoR, 2009).

Consultant radiographer numbers are growing, but progress is slow given the overall size of the profession. This may be problematic as the Department of Health (DH, 2000a, 2000b) expect consultant practitioners to be the leaders who are instigating change rather than act as managers per se. However, the number of consultant radiographers in post in proportion to the size of the profession means they are limited as to the degree of change and leadership they can implement. As of May 2013 there were 74 consultant radiographers within a population of approximately 21,000 (Society of Radiographers qualified membership figures); equating to less than 0.4% of the professional mass. So the numbers are:

“... not yet at critical mass to effect change nationally ...”

Price and Edwards (2008), page e66

Price and Edwards (2008) discussed the lack of *“suitably qualified and experienced candidates”* (page e66) owing to a lack of investment in bringing-on the next generation in preparation for the challenges and changes ahead, i.e. there is little or no succession planning in place for these roles. Drennan and Goodman (2011) asserted that often these roles are tied to local demand rather than a relationship with national requirement or expectation. Consequently, many roles have been neither recognised as part of the overall national workforce nor considered in succession planning.

Experiencing the Research Role of the Consultant Radiographer

There are also issues of ad hoc and non-validated training for extended role activities; creating potential problems with acceptability of qualifications and competency for radiographers when they transfer to other departments; resulting in excessive duplication of training across healthcare providers. The study by Miller, Price and Vosper (2011) illustrated wide variation throughout the UK in both the training provided and implementation of extended radiographer roles, and discussed the lack of uniform accreditation for competency. A definitive national accreditation through the Society and College of Radiographers, as the Professional Body, may be the answer, as this would demonstrate minimum standards required of the role, ensuring this is transferrable and assisting in benchmarking (Law, 2006; Kelly, 2010).

Price and Edwards (2008) also discussed the requirement to up “*soft skills*”, such as confidence and self belief, as these are difficult leadership roles that must be nurtured and developed. They contended that those who are well supported are more likely to succeed.

The review by Drennan and Goodman (2011) of nurse consultant practice highlighted key areas of similarity with radiography:

1. Often there was support for the person but not for the post;
2. Roles were often ambiguous and there were role boundary concerns, creating potential contested ground;
3. The integration of the core domains was unclear;
4. Roles developed best where there was limited overlap with others, and where there was agreement with service managers - where there was a lack of clarity, conflicts tended to arise;
5. There were resource implications for these roles.

Experiencing the Research Role of the Consultant Radiographer

They suggested that each of the four countries within the UK have adopted a slightly different approach to implementing the consultant nurse role, thereby creating a variability and inconsistency. Humphreys, Johnson, Richardson et al. (2007) also noted a lack of investigation into the effectiveness, and indeed cost-effectiveness, of these roles.

Drennan and Goodman (2011) stressed that nurse and midwife consultants are expected to have Master's level education as a minimum. Not all the consultant radiographers in post have a Master's degree. There is even much debate within the profession as to the mandatory qualification held by a consultant radiographer, or whether they should aspire towards Doctoral level education (Manning & Bentley, 2003; Ford, 2010a; Kelly, 2010). This debate continues, and as of January 2013 only one consultant radiographer was known by The College of Radiographers to have attained this level of academic qualification. Therefore:

“Significant investment in education and leadership development is required, as well as considerable growth in research output.”

Paterson (2009), page 2

Currently, the number of consultant radiographers is slow to grow, but the coverage of work practice and diversity across disciplines is extensive (Kelly, 2010). Therefore, the opportunity to be involved in and to lead research is more available than that a few years ago. Very few patient pathways do not involve an imaging component and the cancer care paths are highly extensive; placing radiographers in a strong position to seize research collaboration opportunities.

Experiencing the Research Role of the Consultant Radiographer

1.3.5 *What is the future for radiographic research?* *Why this study is timely*

Reeves (2008) observed that the evidence base for AHPs is generally low and proposed that this is owing to a lack of educational preparedness for research. She reflected that outcome driven research is especially lacking in radiography and building on research capacity should now be seen as a priority.

Professionally there is an urgent necessity for research to underpin clinical practice with radiographers having the skills and confidence to facilitate such work (Gambling, Brown & Hogg, 2003; Lee, Gambling & Hogg, 2004; Harris & Beardmore, 2009). Radiographers should be:

“... working as experts using complex reasoning, critical thinking, reflection and analysis to inform their health assessments, clinical judgements and decisions.”
Graham (2007), page 1811

Good leaders are required, in both the clinical and academic settings, who will influence change and act as catalysts for innovative work. The College of Radiographers ‘*Research and the Radiography Profession: A Strategy for Research 2010 – 2015*’ (CoR, 2010c) appreciated that not all radiographers can be involved in research all of the time. Therefore, it advocated that some radiographers have roles with defined research elements and have centres of research expertise; thereby aiding research capacity and capability, and dissemination of findings. As research:

“... must become fully embedded in the work of all consultant radiographers.”
Paterson (2009), page 3

Experiencing the Research Role of the Consultant Radiographer

It is imperative that research activity is recognised as an integral part of a radiographer's work, because it identifies innovative ways of working. It provides information on the costs and effectiveness of health technologies, and it provides the evidence for the delivery of healthcare services to improve the quality of patient care (DH, 2006; NIHR, 2007).

Opportunities for research training must increase, and research involvement must be recognised as a legitimate part of professional activity. Indeed, Law (2006) observed that research and audit competency for a consultant radiographer "cannot be started early enough" (page 30) and Reeves (2008) commented that:

"Individual consultants have a responsibility to ensure that they develop their own research competence where they feel it is lacking, in order that they can fulfil the expectations of their role in terms of research leadership."

Reeves (2008), page e64

The Skills for Health '*Nationally Transferable Roles Template*' discussion paper (Skills for Health, 2011) stated clearly that consultant practitioners must be publishing their work in peer reviewed journals and be presenting at national and international events. It is worrying that even those in-post who are doing research might not be publishing the results of their work. An audit of consultant AHP practice conducted by Turnpenney (2003) noted differences between radiographers and other AHP staff. Despite being the third largest AHP group, research capacity and output from radiographers is low, and compared to other AHP colleagues radiography has been recorded as under par (Needle, Petchey, Benson, et al., 2011). The recognised research activity and publication record of dieticians and physiotherapists in particular has been recorded over time as much higher than that

Experiencing the Research Role of the Consultant Radiographer

for radiographers (P. Williams, 2002; Gambling, Brown, & Hogg, 2003; Upton & Upton, 2006), therefore:

“The goal surely must be that all consultant radiographers publish as a matter of course, and that research activity is a routine part of their job plans.”

Paterson (2009), page 3

Although research is one of the four key domains of practice for a consultant radiographer, it is unknown how many are undertaking research as an integral part of their role. Price and Paterson (2002) stated that these individuals should be managing their own caseloads, and therefore are in a position to ensure the clinical work is linked to an evidence base. They noted that sometimes the consultant radiographer might be the research lead, but in addition the role is about evaluating and critiquing the work of others. They stressed that a key part of the consultant role is ensuring the dissemination and sharing of work. Manley (1997) also emphasised that to undertake such a role requires a knowledge base and an understanding of appropriate methodologies and, therefore, advocated the benefits of being in joint education and clinical contracts.

Lizarondo, Grimmer-Somers and Kumar (2011) contended that evidence-based practice is often not utilised by clinical practitioners in day-to-day practice and that there is a “research-practice gap”. They accentuated the negativity towards research and evidence-based practice and espoused the need to improve research cultures by ensuring more regular involvement and exposure to research evidence.

Experiencing the Research Role of the Consultant Radiographer

Radiographers must be changing the way they practice, involving more leadership and integrating an evidence base and reasoning into the clinical setting. Changes in traditional leadership roles are happening and consultant radiographers can bring a different level of leadership as:

“Radiographers are taking on greater responsibilities and today perform work that only a few years ago was exclusively the radiologists.”

Hafslund, Clare, Graverholt, et al. (2008), page 343

Paterson (2009) stressed the necessity for consultant radiographers to have autonomy, rather than having work delegated to them, and even asked if the longevity and role of the consultant radiographer is secure? She determined five goals which must be achieved and integrated to ensure success of the posts:

1. research
2. education
3. consultant practice accreditation
4. leadership
5. interprofessional relationships

1.4 **SUMMARY OF CHAPTER**

This background literature review reveals there are problems with implementing the consultant radiographer role, and in particular fulfilling the research core domain.

The literature indicates that consultant radiographer roles appear to be different to other AHPs and nursing. The main issues raised were:

Experiencing the Research Role of the Consultant Radiographer

- Both an increase in imaging requirements and a lack of radiologists to meet this demand have been significant drivers for implementing consultant radiographer roles.
- Consultant radiographer posts have mainly developed around a specific service demand, leading to variability in the roles.
- The clinical domain is significantly more than the 50% recommendation and studies indicate that consultant radiographers spend more time on clinical work than other consultant practitioners.
- There is less autonomy for radiographers owing to traditional practice boundaries.
- Research is not fully integrated into the culture of radiography.

Experiencing the Research Role of the Consultant Radiographer

CHAPTER 2

METHODOLOGY AND STUDY DESIGN

2.1 INTRODUCTION TO CHAPTER

The following chapter describes and justifies the methodology and design used.

The aim and reason for the study are defined and the research approach, strategy and process clarified.

The research methods, data collection and samples are described.

2.2 THE AIM OF THE STUDY

The aim of this study was to explore what the core domain of research means to consultant radiographers in clinical practice and to identify the key factors that facilitate or hinder research activity by this staff group.

At a *Consultant Radiographer Group* meeting held at The Society and College of Radiographers (SCoR) headquarters on the 14th March 2011 there was discussion on the barriers and facilitators to research by those in attendance. This led to the evolution of the aim for this study and to follow on from this initial discussion the researcher wanted to:

Experiencing the Research Role of the Consultant Radiographer

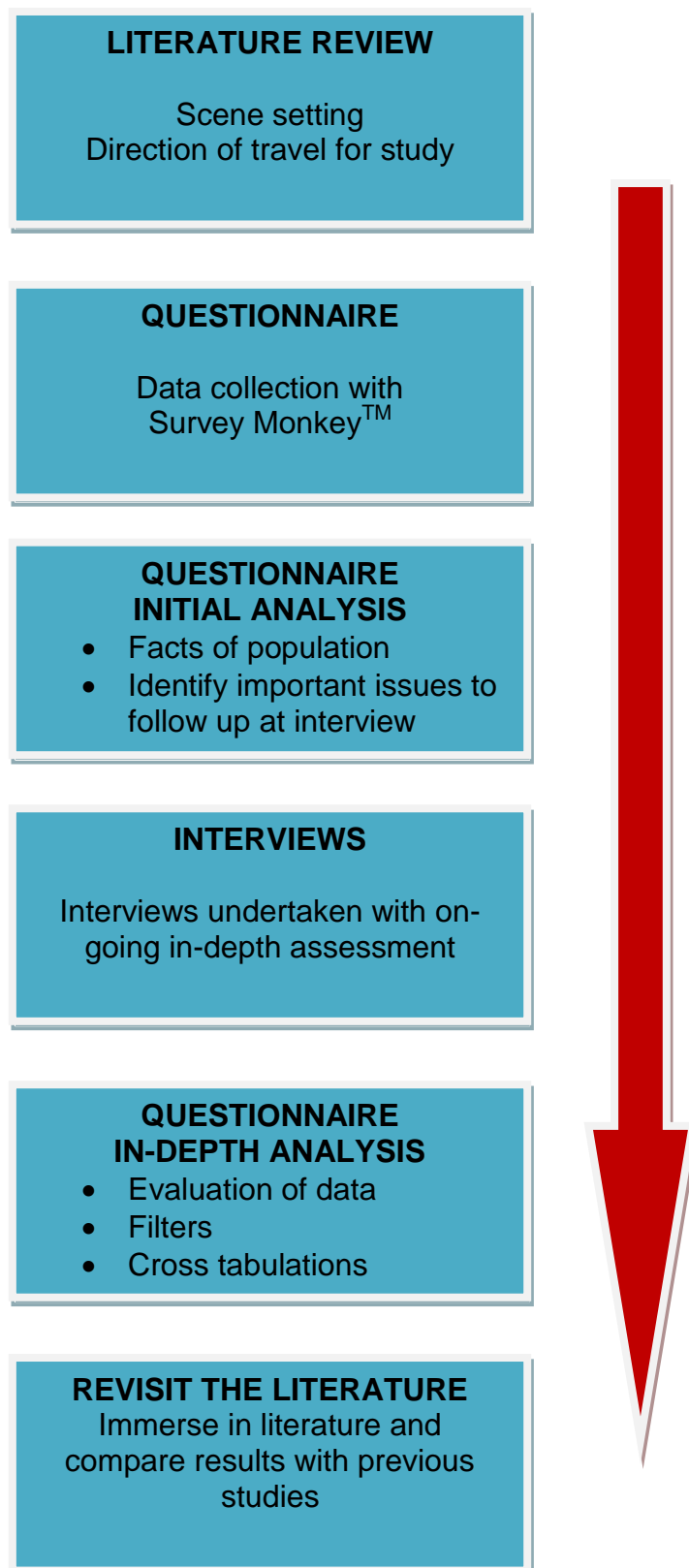
1. Explore what the research role means to consultant radiographers;
2. Identify the key factors that facilitate or hinder research activity by this staff group;
3. Determine what is needed to increase research activity by consultant radiographers.

In relation to consultant radiographers' roles, the following main questions were explored:

- What does the term 'research' mean to individuals?
- What research training has been undertaken?
- What research skills and competencies have been developed?
- Are individuals building on the professional body of knowledge?
- What is the extent of research undertaken as part of the consultant radiographer role?
- What time allocation is given to research?
- What organisational support is there for the individual and for the role?
- What are the barriers to undertaking research?
- What are the facilitators to undertaking research?

To investigate these areas the study employed a literature review, questionnaire, and semi-structured interviews, as per *Figure 1*.

Experiencing the Research Role of the Consultant Radiographer



**Figure 1: Study Progression
(illustrating the phases of the study)**

Experiencing the Research Role of the Consultant Radiographer

2.3 RESEARCH PHILOSOPHY AND APPROACH

An interpretative sociological stance underpins the enquiry, as this emphasises the understanding of individual implicit perspectives by accepting multiple patterns of causality (Ritzer & Goodman, 2004).

The subjective and individual reasons why consultant radiographers engage in and respond to research are paramount to this work. The study seeks to understand the individual meanings consultant radiographers give to the term 'research', to explore what they mean by 'research' and to determine the social contexts that either facilitate or hinder the research core domain.

The work follows an inductive constructivist approach (Charmaz, 2006), which appreciates that the researcher is part of the process and:

"... fosters researchers' reflexivity about their own interpretations as well as those of the research participants."

Charmaz (2006), page 131

The analysis took account that the researcher is a professional officer working in an environment surrounded by research and with personal preconceived notions. It was felt that the constructivist approach would allow previous knowledge to be utilised advantageously, rather than affect the resultant data, as:

"We are not passive receptacles into which data are poured."

Charmaz (2006), page 15

Experiencing the Research Role of the Consultant Radiographer

The researcher acknowledges her own previous stance in that she believes the research core domain should be a part of the consultant role and appreciates this may have affected resultant data because:

“The researcher-practitioner brings with her an agenda to improve practice and a body of professional knowledge and experience as to exactly what improved practice means, and for that reason, her experience as a practitioner is of equal or greater importance to her experience as a researcher.”

Rolfe (1996), page 1318

The enquiry is inductive in its approach as data were collected in an on-going manner, with constant movement between data collection and assessment. The theory is developed and grounded from the results of the data analysis.

2.4 RESEARCH STRATEGY: GROUNDED THEORY

Grounded theory was first proposed by Glaser and Strauss (1967) and is based on “*individual reflexive engagement*” (Goulding, 2005); focussing on the meanings individuals give to situations and allowing core issues to emerge (Backman & Kyngas, 1999). Both data collection and data analysis are ongoing and simultaneous, rather than linear step-by-step sections. There is no hypothesis that should be proved or disproved and no preconceived idea; rather the researcher goes with the emerging concepts and allows a theory for the reasoning to generate.

Since 1967 various adaptations have been discussed, and indeed even Glaser and Strauss conflicted on grounded theory methodology; such that Strauss went on to work with Corbin on a modified version of grounded theory (Strauss & Corbin, 1990).

Experiencing the Research Role of the Consultant Radiographer

Glaser (2001) advocated conceptual objectivist theory i.e. the generation of concepts which are grounded in the research. Cutcliffe (2005) however debated what conceptualisation really is and felt it is open to variation in usage, and actually questioned if a study does not use conceptualisation, but rather descriptors; then is this really grounded theory?

For Glaser (2001) concepts must come from the data and that the researcher:

“... whether in qualitative or quantitative data, moves into an area of interest with no problem. He moves in with the abstract of wonderment of what is going on in an issue and how it is handled.”

Glaser (1992), page 22

Glaserian grounded theory has no preconceived notions of what the final outcomes will be, but rather allows the process to work through the data, and for the final theory to emerge from the data. Backman and Kyngas (1999) debated just how much researchers should familiarise themselves with the topic area prior to undertaking a study. In addition, they reflected that one of the biggest challenges for the Glaserian researcher is remaining detached from previous ideas or work which may bias or skew the data.

Strauss and Corbin (1990) however, recognised that the researcher may have knowledge in the area under study, in which case they should acknowledge that this may shape their enquiry. In addition, Baker, Wuest and Noerager Stern (1992) and Blumer (1969) argued that the researcher, and his or her preconceived experiences, is actually part of the overall social data, and therefore cannot be divorced from the latter.

Experiencing the Research Role of the Consultant Radiographer

To remain completely true to the Glaserian approach is difficult for an insider researcher, especially with access to modern information technology yielding greater exposure to external influences. Therefore, true objectivity is rare as:

“No researcher is an ‘empty vessel,’ a person who can approach an area of study with an entirely a-theoretical stance.”

Cutcliffe (2005), page 424

Cutcliffe (2005) considered the difficulties for grounded theory researchers who have to submit proposals with research questions and purposes for the enquiry (i.e. thesis proposals), and debated if this is one of the reasons for the breakaway from the more traditional Glaserian approach and the development of more modified or “*blended*” methodology (Bowen, 2008).

This work does not follow the traditional Glaserian approach; however it still uses the grounded theory method, albeit in a modified form. The researcher did have to submit to an ethics committee and produce a detailed study proposal, which required some literature review before commencing the work. However, the researcher approached the interviewees with very open questions and allowed interviews to flow freely and did not force interview direction. The analysis of the interviews also moves from initial descriptors to concepts. Strauss and Corbin (1990) argued that research using descriptors in this way is still valid in grounded theory.

Experiencing the Research Role of the Consultant Radiographer

2.5 **DATA COLLECTION METHODS**

2.5.1 **Search process**

Prior to the study, a literature review was undertaken of published articles from 1998 to March 2011. The purpose of the initial literature review was to gather background information about consultant practitioner roles and to determine a direction of travel.

A second more detailed literature review was undertaken from January to April 2013. The purpose of the second review was to immerse in the literature following on from the data gathering and analysis, and to compare and contrast findings with other studies. Additionally, the second review picked-up any publications since March 2011.

Keywords in the literature search were: 'consultant radiographer'; 'research'; 'radiography'; 'evidence-based practice'; and 'role development'; combined using Boolean logic.

Databases used were: MEDLINEPubmed, CINAHL, PreMEDLINE, EBSCO EJS, Science Direct, and ISI Web of Science.

Other search strategies used were: reference chaining, following up from reference lists of relevant articles; hand searching of key radiography journals and conference proceedings with ready professional access; and reference feedback by subject indexing key references.

Experiencing the Research Role of the Consultant Radiographer

In addition, Department of Health, Skills for Health, and professional body websites were accessed as these provide information for staff which might influence practice.

(See Appendix 1: Literature Search Process)

2.5.2 **Method choices**

A grounded theory approach was employed and within that mixed data collection enabled triangulation of data.

The data from the questionnaire section were largely quantitative, but there were open ended questions where qualitative data were captured.

The interview section was qualitative.

2.5.3 **The questionnaire**

An electronic questionnaire (*see Appendix 2: Questionnaire*) using the Survey Monkey™ tool, was e-mailed to all consultant radiographers who are members of The Society of Radiographers (SoR). An on-line version of the questionnaire was used as this is the normal procedure at The Society and College of Radiographers (SCoR) and previous surveys have yielded good response rates from membership.

The questionnaire had a pre-set structure and involved no 'face to face' contact. The aim of the questionnaire was to collect background information, to explore broad

Experiencing the Research Role of the Consultant Radiographer

themes and gauge any areas of diversity in opinion, and to use the responses to formulate more in-depth questions for use at the interview stage.

Advantages of the questionnaire for this study:

1. A wide sample of consultant radiographers over a large area was reached, as those in consultant practice are located across the United Kingdom.
2. Although the initial preparation was timely, the actual method was quite quick.
3. The responses were standardised.
4. The respondent could fill in the questionnaire at their convenience.
5. Anonymity could be assured, as there was no face-to-face contact and a 'group' e-mail address was used rather than individual contact details.

Disadvantages of the questionnaire for this study:

1. Ambiguity may have occurred for some questions.
2. Some respondents only partially completed the questionnaire.

(Based on ideas by Bailey, 1978; Frankfort-Nachmias & Nachmias, 1992)

It is important to note that detailed questionnaire analysis occurred after the interview stage so as to minimise researcher bias during interviews.

2.5.4 The interviews

There was a loose interview guide which was developed following feedback from a *Consultant Radiographer Group* research workshop (see *Appendix 3: Interview Guide*) but this was not followed rigidly and wording and order of questions varied during and across interviews.

Each interview took between sixty and ninety minutes, depending on time constraints and the willingness of the consultant radiographer to talk openly for such a length of time. First names were used substantially throughout each interview to try to achieve

Experiencing the Research Role of the Consultant Radiographer

a relaxed atmosphere for the interviewee and make the process more conversational. All names were later removed from all transcripts to maintain confidentiality.

All interviews were audio-taped and transcribed verbatim within two days of interview to enhance accuracy of the data (*see Appendix 4: Sample from Interview Transcript*). Interviews were transcribed by a professional transcribing service and on return the researcher compared the audio-tape to the transcription to ensure accuracy. All interviewees also confirmed the interview transcript.

Each interview was read through twice and the salient points and key quotes extracted so as:

“... to record as fully and fairly as possible that particular interviewee’s perspective.”

Patton (1990), page 206

As the data collection developed, a number of key issues began to arise which the interviewer wanted to follow-up further with subsequent interviewees. In particular, a few interviewees mentioned that research should not be a core domain of consultant practice and the term ‘research’ had different meanings to different interviewees and caused some confusion in interpretation. These concepts were explored at a deeper level with further interviewees.

The investigation aimed to reach saturation point on topics when no new or changing data were really exposed. Charmaz (2006) reflected that the grounded theorist must

Experiencing the Research Role of the Consultant Radiographer

be careful not to force his or her ideas onto the data; therefore, the final themes and core categories were shared with the interviewees as a way of verifying the data.

Burgess (1984) referred to interviews as “*conversation with a purpose*” as they allow a more in depth exploration of attitudes, beliefs and opinions; which are central to the ethos of this enquiry and the implementation of research in the profession. It was anticipated that interviews would be of a highly personal nature with full and frank dialogue. The consultant radiographers are ‘subjects’ not ‘objects’, therefore at times the interviewer actually became the interviewee; a phenomenon also described by Charmaz (2004),

May (1997) described interviewing as finding out how someone else is feeling and what is on their mind. The role of the interviewer is all important in this process and will either ‘make or break’ the data received as:

“The quality of the information generated from the interview is dependent to a great extent on the behaviour of the interviewer.”

Cormack (1984), page 182

Charmaz (2006) referred to interviews as “*directed conversation*” and argued that probing, commenting, and sharing with the interviewee helps build a rapport and encourages the interviewee to reflect, rather than just answering direct questions. She described “*negotiations during the interview*” (page 27) which this researcher employed by sharing feelings with the interviewee to aid in softening any perceived imbalance in power and professional status.

Experiencing the Research Role of the Consultant Radiographer

Advantages of interviewing for this study:

1. Areas of ambiguity could be discussed.
2. It allowed for expansion of ideas and topics of interest that may have been missing in the questionnaire. Some topics arose spontaneously in the conversation.
3. The consultant radiographers' own terms for how they were feeling could be used.
4. It allowed for the understanding of alternative views and why interviewees had that opinion.

Disadvantages of interviewing for this study:

1. The interviewer may have introduced bias and influenced the direction of the interview.
2. Analysis was difficult and time consuming.

(Based on ideas by Bailey, 1978; Frankfort-Nachmias & Nachmias, 1992)

Hall and Callery (2001) noted that transcription of audiotapes can aid in illustrating reliability of the data, but as the researcher probes and changes the possible direction of an interview he or she is in a position of control and is shaping the interview. However, Kvale (1995) stressed the obligation for researchers to ensure “*equity in their power relationships with participants*”.

Interactive discussions did occur during the interviews in this study, and were important as this gave interviewees control over them.

2.6 **STUDY EXECUTION**

2.6.1 **Background**

Data were collected via questionnaires and tape-recorded interviews.

Experiencing the Research Role of the Consultant Radiographer

To aid in the reduction of bias, field collaborators worked with the researcher to review the raw data and to discuss ways to analyse and interpret it. For the questionnaire data, one of these collaborators was the research supervisor and the other was from a radiographic background. For the interview data, two different field collaborators were used: a qualitative researcher with an interest in grounded theory and the other from a radiographic background. Backman and Kyngas (1999) suggested that validity of results can be aided by using an expert outside of the project. However, in reality the field collaborators used during this research were essentially peer advisors rather than data evaluators.

The questionnaire results were analysed with descriptive statistics using the facilities on Survey Monkey™ and did not involve complex assessment. Initial evaluation focussed on background facts about the population and was used to identify key issues to be followed-up at interview. More detailed analysis of the questionnaire data did not occur until after the interview stage so as not to bias the researcher whilst a theoretical framework was being developed.

(See Appendix 5: Gantt chart for timeframes)

2.6.2 **Questionnaire Section**

2.6.2.1 **User involvement**

A *Consultant Radiographer Group* research workshop was held at The Society and College of Radiographers (SCoR) headquarters on the 14th March 2011. This meeting was serendipitous, rather than planned for the purposes of the research

Experiencing the Research Role of the Consultant Radiographer

project, but provided a forum to discuss initial thoughts on barriers and facilitators to research.

(See Appendix 6: Ideas for questions from meeting)

2.6.2.2 Previous studies

Two previous surveys investigating research in clinical practice particularly aided the questionnaire construction and focus; both sets of authors consented to the use of their work in this questionnaire construction.

Ahonen and Liikanen (2010) designed an eleven item questionnaire to evaluate the use of research information in the work of radiographers in Finland. The internal consistency of the Ahonen and Liikanen (2010) questionnaire demonstrated reliability as the Cronbach alpha scores were over 0.7 on the constructs used to measure knowledge of research, significance of research activity, research orientated ways of working, and support (Cronbach alpha scores reliability for the constructs measured; a score over 0.7 indicates that the items used to measure a construct were accurately measuring that construct).

Elliott, Wilson, Svensson and Brennan (2009) designed a thirty-two item questionnaire, divided into four main sections, to evaluate whether research was embedded into ultrasound practice across the United Kingdom. Their questionnaire was specifically designed to investigate the level of involvement in research, the utilisation of research findings, attitudes towards research and perceived barriers to active research involvement. One of the principal aims of their work was to establish if particular subgroups demonstrated different responses to other subgroups in terms

Experiencing the Research Role of the Consultant Radiographer

of research activity and utilisation, along with attitudes and perceived barriers towards performing research.

In addition, two other studies (Funk, Champagne, Wiese, & Tornquist, 1991; Retsas, 2000) which used the *Barriers to Research Utilisation Scale* developed by Sandra Funk (Funk, et al., 1991) were explored, but the researcher was unable to contact the authors to gain consent to use the scale.

2.6.2.3 **Final questionnaire construction**

The final questionnaire comprised 48 questions, grouped into 6 sections (*as per Table 1*). Questions varied in type with a mixture of yes/no, multiple choices, Likert scales, and open ended or free text. The open ended questions and free text options allowed for qualitative responses (Charmaz, 2006).

Table 1: Distribution of Questions in Questionnaire

Section	Number of Questions
Demographics and Background Information	5
Research Knowledge Base	8
Research Activity	5
Research Publication and Presentation	6
Opinion	18
Research Support	6

Content validity and composition of the questionnaire were both evaluated by four selected academics; three from a radiographic background and the research supervisor. In addition, the questionnaire was piloted on five consultant radiographers before launch. This was to conduct a feasibility and acceptability

Experiencing the Research Role of the Consultant Radiographer

check on the practicality and ease of using the online version, clarity of questions, relevance of answer possibilities, and time burden. The pilots reported that the questionnaire would take a maximum of thirty minutes to complete, which the researcher felt was acceptable given the importance of the topic and relevance to everyday clinical practice. No other feedback was received from the pilots.

2.6.2.4 **The Questionnaire data collection**

A link to the on-line questionnaire, using the Survey Monkey™ tool, was e-mailed to all consultant radiographers in the United Kingdom (n=61) on The Society and College of Radiographers 'consultant radiographer group' e-mail list. This e-mail list does not show individual e-mails and the researcher could not trace who responded to each call. In addition, a 'back-up' pdf file was attached to the e-mail which could be printed off, and a hard copy returned if required (no-one used this option). (See *Appendix 3: Questionnaire*)

The questionnaire was sent to the group e-mail list on the 18th November 2011. Reminder e-mails were sent on the 2nd and 16th of December 2011. The closing date for return of responses was the 23rd of December 2011; i.e. a total of 5 weeks access.

2.6.2.5 **Questionnaire analysis**

2.6.2.5.1 **Initial analysis of questionnaire**

The questionnaire results were analysed with descriptive statistics using the facilities on Survey Monkey™. The initial analysis enabled an overview of group

Experiencing the Research Role of the Consultant Radiographer

characteristics and highlighted areas where opinions or answers were varied. In addition, the descriptive elements were used to inform the interview schedule.

2.6.2.5.2 **Detailed analysis of questionnaire**

Filters and cross tabulations did not occur until after the interview stage so as to reduce researcher bias.

The cross tabulation function within Survey Monkey™ was used for those who responded:

- they had been in post '*more than 5 years*' (n=11)
- they had an '*MSc/MA*' (n=38)
- '*yes*' '*research should be a main part of my role*' (n=21)
- '*yes*' '*ever published the results of a research project*' (n=14)

It was felt these four cross tabulations would identify if there was a relationship between length of time in post and level of qualification attained to publication records, and whether research should be a main part of the role.

In addition, three filters were used on the data to denote the consultant radiographers in the most prevalent work areas (according to the information held by The Society and College of Radiographers database):

1. *Breast imaging* (n=22)
2. *Ultrasound* (n=9)
3. *Radiotherapy and Oncology* (n=8)

These reflect the great diversity and scope of practice of radiography. It was felt that these three filters could highlight if there were differences in opinions across these three main areas of consultant practice. Owing to the smaller numbers in ultrasound

Experiencing the Research Role of the Consultant Radiographer

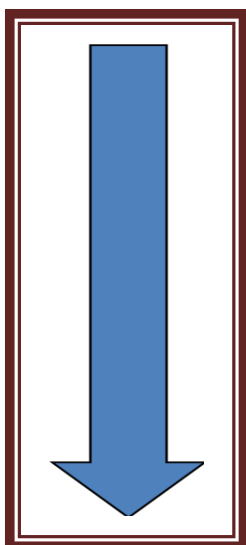
and radiotherapy and oncology the researcher had to apply caution in interpreting results so that individual anonymity of respondents would be maintained.

Section 5 of the questionnaire on 'opinion' consisted of eighteen statements with five-point Likert scales which were used to measure level of agreement-disagreement. Consensus was deemed to have occurred when respondents were in agreement on a statement in a range from neutral to strongly agree. Diversity was deemed to have occurred when measurements ranged across the agreement and disagreement statements: agree/strongly agree to disagree/strongly disagree.

2.6.3 Interview Section

2.6.3.1 Coding of interviews

Data were analysed using a framework approach (*as per Figure 2*).



After each interview **memos** on what really stood out
Pre-code and look for the real 'stand out' quotes in the interview
1st cycle (initial) **open coding** using in vivo and descriptive codes
2nd cycle **focussed coding** with analytical memos
From the second cycle **coding themes** began to emerge
Themes were collapsed into 10 **Theoretical Categories**
Three **Core Categories** were identified

Figure 2: The Framework Approach
(used to code and categorise the interviews)

Experiencing the Research Role of the Consultant Radiographer

Primarily, content analysis was undertaken by reading and re-reading interview transcripts to identify initial codes; but as noted by Saldana (2009) qualitative coding is “*an interpretative act*” and “*not a precise science*” (page 4).

Notes were taken during each interview and acted as ‘memory joggers’, as recommended by Burnard (1991), as to what seemed key during that interview, i.e. what came across most passionately. After each interview a one page ‘first impressions’ memo was noted down to pick up on salient points (see *Appendix 7: Sample of Post Interview Memo*). The memos were invaluable as they provided initial reactions about an interview, e.g. did the interviewee seem open or guarded?; what was their stance towards the core domain of research? The interviewer returned to the post interview memos after coding to verify data and to ‘self-monitor’, as suggested by Chiovitti and Piran (2003).

During the interview stage ‘open’ coding was used initially, which overall afforded a broader insight (see *Appendix 8: Open Coding*). These codes were open and wide, proceeded line-by-line, and were based on recurring words from the transcription of each interview. The ‘*in vivo*’ codes were especially useful as they were the participants’ phrases or terms. The:

“... coding generates the bones of your analysis. Theoretical integration will assemble these bones into a working skeleton. Thus, coding is more than a beginning; it shapes an analytic frame from which you build the analysis.”

Charmaz (2006), page 45

Charmaz (2006) emphasised that language is crucial and that focusing on the emerging coding is the basis of grounded theory as:

Experiencing the Research Role of the Consultant Radiographer

“Coding is the pivotal link between collecting data and developing an emergent theory to explain these data. Through coding, you define what is happening in the data and begin to grapple with what it means.”

Charmaz (2006), page 46

Chiovitti and Piran (2003) underlined the necessity for the researcher to acknowledge how they may have affected the interpretation of the data. For example, another researcher might have come up with different codes from the same interviews and that is because individual perspectives will influence coding (Harper & Thompson, 2012).

2.6.3.2 Themes and theoretical categories

The next stage involved ‘selective’ or ‘focussed’ coding, by grouping the open codes into categories (see Appendix 9: Sample of Focussed Coding). Focussed coding:

“... means using the most significant and/or frequent earlier codes to sift through large amounts of data. Focused coding requires decisions about which initial codes make the most analytical sense to categorise your data incisively and completely.”

Charmaz (2006), page 57

This coding was assessed and re-assessed and the links between and across each selective code were identified to form ‘axial’ codes (Strauss & Corbin, 1990), i.e. was there a link between one coding and another such as ‘cause and effect’? From the second cycle of coding themes began to emerge. Certain themes were based on a general consensus of opinion; others came from the diversity of views and were explored in further interviews.

Experiencing the Research Role of the Consultant Radiographer

The created themes were subject to change as new data evolved, until eventually the themes compounded to a few core categories and no new information was drawn from the analysis, i.e. ‘*saturation point*’ was reached (Strauss & Corbin, 1990).

Bowen (2008) defined ‘saturation’ as when no new data needs to be added because the category has been explained, but warned with the constant comparative method to look for the “*negative cases*” that may refute the theory. Similarly, Glaser observed that saturation:

“... is not seeing the same pattern over and over again. It is the conceptualisation of comparisons of these incidents which yield different properties of the pattern, until no new properties of the pattern emerge.”

Glaser (2001), page 191

Theoretical saturation might be harder to achieve in reality than is often espoused and it is important to be aware of:

“... the hazard of assuming the categories are saturated when they may not be.”

Charmaz (2006), page 114

Indeed, during this study, theoretical saturation could have occurred at interviewee nine; however interviewee ten brought new concepts and data to the study which, had interviews not continued, would have resulted in a very different data set. Therefore, the aim should be for theoretical saturation, whilst being mindful that it might not truly have been achieved. Dey (1999) also questioned true saturation, as he felt categories are only ever partially coded and will have been derived by the researcher, so are inherently skewed.

Experiencing the Research Role of the Consultant Radiographer

2.6.3.3 **The emergence of a theory**

As the data gradually collapsed, and the main themes began to emerge, mind maps were used to link and interpret the analysis. The 'mind maps', a technique espoused by Clarke (2003), used during the interview section of the research are visually helpful in illustrating the links across the data, highlighting the barriers to research and the necessary facilitators to aid it happening.

As noted by Williams (2012), the analysis and evaluation, and indeed the identification of themes and influences, are subjective and the researcher's own previous experiences will have affected the data.

The aim of this study was to explore what the core domain of research means to consultant radiographers in clinical practice and to identify the key factors that facilitate or hinder research activity by this staff group.. Credibility of the interviews was enhanced by giving the consultant radiographers the opportunity to steer and modify the questions, as recommended by Chiovitti and Piran (2003).

The grounded theory approach allowed a model of behaviour to be developed which can be explained and validated by the generated data (Morse & Field, 1996). This was compounded and grounded by the *constant comparison* (Glaser & Strauss, 1967) of data obtained across various interviews from different individuals. The theoretical coding was used to build the framework and:

"... weave the fractured story back together."

Glaser (1978), page 72

Experiencing the Research Role of the Consultant Radiographer

The analysis and interpretation of the data, and therefore the final theory, are subjective and do limit the research (Saldana, 2009), however Charmaz (2006) described this as “*real world*” and “*interpretive theory*”, which concentrates on “*understanding*” rather than “*explaining*” both the data and the subsequent theory. Interpretive theory seems more realistic in its approach as it embraces both multiple links across data and subjectivity in developing the theory; but this is accepted and is deemed inevitable when dealing with ‘real life’ situations. As noted by Charmaz (2006):

“Rather than contributing verified knowledge, I see grounded theorists as offering plausible accounts.”

Charmaz (2006), page 132

Thirty four ‘*Themes*’ were collapsed into ten ‘*Theoretical Categories*’ (see *Appendix 10: Theoretical Categories*). The combined Theoretical Categories were then used to build a conceptual framework of the barriers and facilitators to consultant radiographer research.

2.7 **QUALITY CRITERIA**

2.7.1 **Acceptability of evidence**

Koch (1994) reflected that there is an inherent unpredictability in the findings of grounded theory, therefore both the rigorous and methodical analysis of the data are imperative.

Experiencing the Research Role of the Consultant Radiographer

Throughout, the researcher has attempted to follow the social constructivist version of grounded theory as espoused by Kathy Charmaz (2006) and thus uses the four criteria described by Charmaz, to “*enhance the acceptability of evidence*” (page 182).

The criteria used by Charmaz (2006) are:

- credibility;
- originality;
- resonance;
- usefulness.

2.7.1.1 Credibility

‘Credibility’ focuses on the strength of the results i.e. is there enough evidence to make claims about the data?

To increase *credibility* in grounded theory it is important that there are strong links between the data and the final theory proposed. A good way of ensuring this is to use the participants’ own words (in-vivo codes) in the development of the theory and in doing so empowering them, as recommend by Chiovitti and Piran (2003). The in-vivo codes used in this work are often the most powerful; e.g. “*with an intelligent overview*” (*interviewee 22*). However, Charmaz (2004) counselled caution and reminded researchers to remain “*faithful to the studied phenomenon*” (page 985), particularly with quotes, to ensure these are representative of the bigger picture and not chosen just because they are the “*juiciest*”.

Credibility of the data has been enhanced by asking the research participants to validate the research criteria. This is certainly a move away from the traditional

Experiencing the Research Role of the Consultant Radiographer

Glaserian approach, but assists 'user buy-in' to the end results, as suggested by Cutcliffe (2005).

For both the questionnaire and interview stages, descriptive information about the research participants was produced. The consultant radiographers are a small proportion of the profession as a whole; therefore the whole population of consultant radiographers were invited to participate in both the questionnaire and the interview stages, with all those volunteering at each stage entered into the study.

2.7.1.2 **Originality**

'Originality' questions if a study provides new insights into a topic area.

The results do introduce new views regarding the roles of consultant radiographers and challenge preconceptions. In particular, the diversity of experiences of those undertaking the role adds new perspectives to the previous literature.

2.7.1.3 **Resonance**

'Resonance' asks if people's experiences have been correctly portrayed i.e. does the interpretation of the interviews and the subsequent themes relate to what the interviewees said and what they meant?

The core categories and the theoretical model relate back to the data and thus should be capable of replication under similar conditions, as recommend by Hall and Callery (2001). The entire interview data were coded line-by-line and relationships formed from core categories with recurring topics, reaching saturation point.

Experiencing the Research Role of the Consultant Radiographer

All interviewees were provided with a copy of their transcript for verification, thus assuring confirmation of content and trustworthiness of the data. The research summary and theoretical categories were also presented and discussed at a Consultant Radiographer Group meeting on the 26th March 2013.

2.7.1.4 **Usefulness**

'Usefulness' questions if the results can be used to improve or assist the topic area investigated.

The results and recommendations should be useful to the profession of radiography as a whole, and will be used to produce future guidance and support for consultant radiographers.

2.7.2 **Reflexivity**

Throughout, the researcher held a *Journal of Personal Reflexivity*, citing own development, experiences, and thoughts whilst conducting the research (Koch, 1994). This helped as a dual function: firstly as an 'audit trail'; and secondly to help detect any researcher introduced bias, as recommended by Boyes (2004).

At the start of this study the researcher's own job role involved significant research responsibilities, despite herself not having a Doctoral level qualification at that time. Throughout the study, a personal journey has been travelled, encompassing development of research skills and appreciating the need for research training.

Experiencing the Research Role of the Consultant Radiographer

Therefore, the researcher acknowledges this may have biased her own opinions towards such training needs for others in research leadership roles.

The researcher could have been viewed as an 'insider' or an 'outsider' researcher to consultant radiographers; she no longer practices clinically, but is a state registered radiographer and is a professional officer working for the professional body which represents this group of staff. The researcher's knowledge of working in the field of radiography was therefore used and acknowledged, rather than just seeking an objective data quest (Riemer, 1977) because:

*"Individuals, groups and organisations do not operate in a vacuum."
Grønhaug and Olson (1999), page 8*

Koch (1994) described this as *"role fusion"* as objectivity cannot be put into practice; and:

*"From the grounded theory perspective, the researcher is a social being who also creates and recreates social processes. Therefore, previous experiences are data."
Baker, Wuest and Noerager Stern (1992), page 1357*

The questionnaire section did not involve interaction between respondents and the researcher, and therefore was more objective; however, the researcher may still have introduced bias through both the questionnaire design and the questions asked.

During the interview stage there was conversation and interaction between the interviewer and interviewees. Adler and Alder (1987) recognised the difficulties in

Experiencing the Research Role of the Consultant Radiographer

such areas of research and noted a compelling requirement for the interviewer to share each interviewee's concerns and opinions, if they are to gain mutual trust and respect. Denzin and Lincoln (1994) confirmed this, as:

"To learn about people we must treat them as people and they will uncover their lives to us."

Denzin and Lincoln (1994), page 207

Blumer (1969) and Charmaz (2004) both referred to this as "*intimate familiarity*" in that sometimes the researcher may empathise with a participant, which may seem inappropriate from a strict research perspective, but is a necessity to show respect for an individual.

Occasionally, there was intervention or a change of topic direction in an interview so as to discuss the needs of the interviewee at that time. Hall and Callery (2001) contended this does not affect the credibility of the research, but rather shows the researcher is demonstrating respect and giving back to the participant. In addition, they stressed that affirmation and empathy are not skewing the data, but rather building rapport and trust.

On reviewing the interviews the researcher believes that on occasion she may have "*projected her own feelings*" (Hall & Callery, 2001) onto the interviewee, but accepts this is part of normal social interaction.

Hall and Callery (2001) also reflected that some people who use the grounded theory method make assumptions that the interview data will "*mirror informants'*

Experiencing the Research Role of the Consultant Radiographer

realities”, and they do not recognise sufficiently the interviewer and interviewee interaction and how this can influence data collection. The data produced are intrinsically dependent on the interaction that occurred between the interviewer and interviewee and in particular the quality of the interviewing, as noted by Kvale (1995). Interactions between individuals will vary and are personal, i.e. there may be a negative or even an aggressive stance from the interviewee with one particular interviewer that may not be reproduced with another, or indeed even with the same interviewer which may not have arisen on a different day or at a different time. This is just normal human interaction and hence the reason for the interpretative sociological stance for the work.

2.8 **ETHICAL CONSIDERATIONS**

2.8.1 **Research approval**

The project was submitted for full National Research Ethics System (NRES) assessment, but was classified by the Bristol Local Regional Ethics Committee (LREC) as service evaluation not requiring full LREC ethical approval. However, the LREC Chair’s approval was given and Exeter University Ethics approval granted (*see Appendix 11: Approval Letters*).

Consent for participation at the questionnaire stage was implied and assumed through the return of those completed. Anonymity was maintained for all respondents.

Experiencing the Research Role of the Consultant Radiographer

Permission regarding participation at the interview stage was via a participant information sheet (PIS) and signed consent (*see Appendix 12: PIS and Consent Form*), and this consent was verified again prior to the start of each interview. Owing to the small number in post overall, and ease with which several interviewees could be identified in smaller specialities, all interviews and transcripts were treated in confidence and anonymity maintained.

2.8.2 **Data protection**

All raw, partially and fully processed data either were or are stored in a locked cabinet accessible only by the researcher.

All electronic data are stored on a networked password protected computer. This includes:

- Raw Material - i.e. notebooks, index cards, file folders, audio-tapes, consent forms
- Partially Processed Data - i.e. transcriptions
- Coded Data
- Researcher Memos
- Analyses
- Reported Text

A risk matrix (*see Appendix 13: Risk Matrix*) was undertaken prior to the study and all risks were deemed as 'low', owing to approved project management.

2.9 **PROFILE OF PARTICIPANTS**

2.9.1 **Questionnaire**

At the time of the questionnaire there were sixty one consultant radiographers listed as members of *The Society and College of Radiographers (SCoR) Consultant Radiographer Group*.

All were in substantive, approved consultant posts (n=56) or consultant radiographer training posts (n=5). All were employed in the NHS at the time of the survey and in Agenda for Change pay bands 8a – 8d (NHS Staff Council, 2011).

The scope of practice and corresponding response rates of the consultant radiographers at the time of the questionnaire is outlined in *Table 2*. The number of responders is representative of the consultant group as a whole.

Experiencing the Research Role of the Consultant Radiographer

Table 2: Profile of Questionnaire Participants (including scope of practice and numbers in post)

Scope of Practice	Number in consultant role at time of questionnaire (n=61)	Number who responded to questionnaire (n=50) (1 non responder to speciality)
Breast Imaging (1 trainee)	23 (38%)	22 (45%)
Ultrasound (1 trainee)	11 (17%)	9 (18%)
Radiotherapy and Oncology	8 (13%)	8 (16%)
GI Imaging (1 trainee)	6 (10%)	2 (5%)
Plain film and general (1 trainee)	4 (6%)	3 (6%)
Emergency Care	3 (5%)	1 (2%)
MRI	3 (5%)	1 (2%)
Endovascular	1 (2%)	1 (2%)
Nuclear Medicine	1 (2%)	1 (2%)
1 trainee CT	1 (2%)	1 (2%)
Gender		
Male	4 (7%)	4 (8%)
Female	57 (93%)	46 (92%)

(GI = gastrointestinal; MRI = Magnetic Resonance Imaging; CT = Computed Tomography)

2.9.2 Interviews

Twenty five of those who completed the questionnaire volunteered for the face-to-face interview phase and all of these were interviewed. This equates to approximately 38% of those in-post at the time (n=66).

Experiencing the Research Role of the Consultant Radiographer

The scope of practice and corresponding response rates of the consultant radiographers interviewed is outlined in *Table 3*.

Table 3: Profile of Interview Participants (including scope of practice and numbers in post)

Scope of Practice	Number in consultant role at time of interviews (n=66)	Number interviewed (n=25)
Breast Imaging (1 trainee)	29 (44%)	11 (44%)
Ultrasound (1 trainee)	11 (16%)	3 (12%)
Radiotherapy and Oncology	8 (12%)	6 (24%)
GI Imaging (1 trainee)	6 (9%)	2 (8%)
Plain film and general (1 trainee)	4 (6%)	1 (4%)
Emergency Care	3 (5%)	1 (4%)
MRI	3 (5%)	1 (4%)
Other	2 (3%)	-
Gender		
Male	5 (7%)	2 (8%)
Female	61 (93%)	23 (92%)

(GI = gastrointestinal; MRI = Magnetic Resonance Imaging)

An e-mail request to participate in the interview stage of the project was sent to all members of the *Society and College of Radiographers Consultant Radiographer Group* on 6th February 2012. By 2nd March 2012, twelve had agreed to be interviewed. A reminder e-mail was sent out and by the end of March twenty two had positively responded. A 'last call' e-mail was sent out on 4th April 2012 in an attempt

Experiencing the Research Role of the Consultant Radiographer

to capture any more who wished to voice an opinion, especially anyone in a more unusual area of practice. The final number interviewed, between 5th March and 21st May 2012, was twenty five.

2.10 **SUMMARY OF CHAPTER**

This chapter has defined the research philosophy and approach. Grounded theory was used as this allowed an account to emerge from the data and for consultant radiographers to express what they felt were the issues in practice. This approach gave a 'voice' to the individuals and highlighted the challenges practitioners face in the clinical setting when trying to undertake the research core domain.

Strengths and weakness of the questionnaire and interview approaches have been discussed.

The profiles cover the diversity of radiographic disciplines; and response rates for both sections were high, which has enhanced the validity and reliability of the data.

The next chapter will report on the results of the questionnaire component of the study.

CHAPTER 3

QUESTIONNAIRE

3.1 INTRODUCTION TO CHAPTER

The following chapter reports the analysis of the questionnaire, undertaken between November and December 2011.

The rationale for the questionnaire phase was to have an overview of the consultant radiographer population and general perspectives towards research as part of their roles. The interview phase then focused on more specific issues raised by individuals.

The questionnaire results record the consultant radiographers' responses to attitudes, abilities and performance with regard to undertaking research as part of their role.

The results are reported as per questionnaire sections:

1. Demographics and Background Information
2. Research Knowledge Base
3. Research Activity
4. Research Publication and Presentation
5. Opinion
6. Research Support

Experiencing the Research Role of the Consultant Radiographer

3.2 **MAIN RESULTS**

All members of the *SCoR Consultant Radiographers' Group* were invited to participate in the questionnaire stage. Fifty responded within the allocated timeframe, which equated to an 82% response rate.

The number of trainee consultants was small; therefore, no distinction was made between trainees and substantive consultants in the analyses below.

All aspects of consultant radiographic practice were represented in the responses.

Not all participants responded to all questions, therefore 'n' values stated for each result are associated with the number of responses to each particular question, as opposed to the number of returned responses.

3.2.1 **Section 1: Demographics and Background Information**

The objective of Section 1 was to gather background information about the consultant radiographer group: gender, age, full or part-time tenures, and length of time in a consultant radiographer position. Key demographics were:

- Forty four respondents were female (n=48=92%).
- Forty eight respondents were over 40 years of age (n=49=98%).
- Forty seven worked in full-time posts (n=49=96%).

Experiencing the Research Role of the Consultant Radiographer

3.2.1.1 **Length of time in post**

The length of time in-post across the three filters of main practice: breast imaging, ultrasound, and radiotherapy and oncology are illustrated in *Table 4*.

Table 4: Length of Time in Post - across main modalities

Years in Post	Response BI % (n=22)	Response US % (n=9)	Response RO % (n=8)	Response Overall % (n=50)
Less than 2 years	32 (7)	33 (3)	12 (1)	34 (17)
2 to 5 years	41 (9)	67 (6)	50 (4)	44 (22)
More than 5 years	27 (6)	0	38 (3)	22 (11)

(BI = breast imaging; US = ultrasound; RO = radiotherapy and oncology)

Those in radiotherapy and oncology tended to have been in post longest, as 38% had been in-post more than five years. Those in breast imaging (32%) and ultrasound (33%) tended to be in-post for less than two years.

3.2.2 **Section 2: Research Knowledge Base**

The objective of Section 2 was to focus on the research knowledge of individuals; specifically academic qualifications and level of research involvement.

Experiencing the Research Role of the Consultant Radiographer

3.2.2.1 Qualifications

Types of academic qualifications held by respondents are shown in *Table 5*. It is of note that the highest academic qualification attained by thirty eight (n=48=79%) of the respondents was Master's level. None recorded a Doctorate; although two commented they were working towards this level. Four (n=46=8%) commented that their research activity was for the attainment of their Master's qualification.

Table 5: Types of Qualifications - across main modalities

Qualifications	Response BI % (n=22)	Response US % (n=8)	Response RO % (n=8)	Response Overall % (n=48)
DCR	86 (19)	75 (6)	100 (8)	85 (41)
BSc	4 (1)	12 (1)	0	8 (4)
BSc (Hons)	18 (4)	0	0	14.5 (7)
PgC	41 (9)	12 (1)	0	31 (15)
PgD	27 (6)	62 (5)	0	31 (15)
MSc/MA	73 (16)	87 (7)	87 (7)	79 (38)
MPhil	0	0	0	0
PhD	0	0	0	0

(BI = breast imaging; US = ultrasound; RO = radiotherapy and oncology)
 (DCR = Diploma of The College of Radiographers; BSc = Bachelor of Science degree; BSc (Hons) = Bachelor of Science degree with honours; PgC = Postgraduate Certificate; PgD = Postgraduate Diploma; MSc = Master of Science; MA = Master of Arts; MPhil = Master of Philosophy; PhD = Doctor of Philosophy)

Experiencing the Research Role of the Consultant Radiographer

There was variation across the three filters of practice: breast imaging, ultrasound, and radiotherapy and oncology. Nineteen in breast imaging (n=22=86%) had a Diploma of The College of Radiographers (DCR) and sixteen (n=22=73%) had a Master's degree. Fifteen (n=22=68%) in the breast imaging group recorded Postgraduate Certificates and Diplomas in certain clinical qualifications. Six in ultrasound (n=8=75%) had a DCR and seven (n=8=87%) had a Master's degree. Five (n=8=62%) in the ultrasound group recorded post graduate diplomas. Of the eight in radiotherapy all (100%) had a DCR and seven (n=8=87%) had a Master's degree. There is no record in this group of Postgraduate Certificates or Diplomas.

3.2.2.2 **Level of research involvement**

As illustrated in *Table 6* there was a variation in level of research involvement. Thirty nine (n=46=84%) stated they had been involved in research planning and proposal writing.

Table 6: Level of Research Involvement

Level of Research Involvement	Response %	Response Count (n=46)
Research planning and writing a proposal	84	39
Data collection	83	38
Data analysis	63	29
Research reporting	43	20
Presentation of findings	52	24
None of the above	9	4

Table 7 highlights the reasons respondents selected for previously or currently engaging in research. Ten (n=47=21%) stated they had previously been a research lead; seven (n=46=15%) stated they were currently a research lead. Nearly half the

Experiencing the Research Role of the Consultant Radiographer

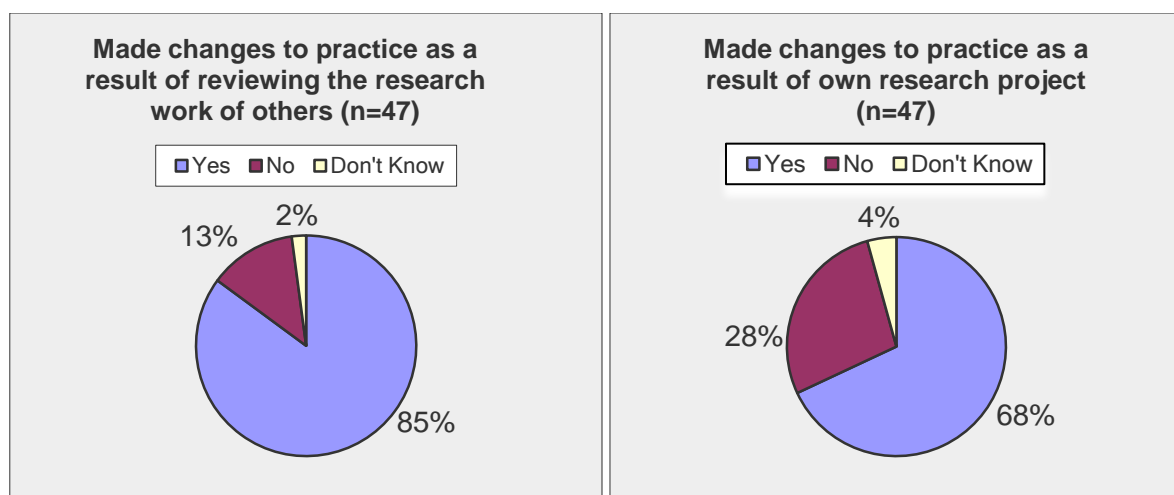
number of respondents (n=47=49%) had previously been in a research team and over half (n=46=52%) were currently involved in one. Thirteen (n=46=28%) stated they were not currently involved in research.

Table 7: Previous and Current Reason for Research Involvement

	PREVIOUS (n=47)		CURRENT (n=46)	
	Response %	Response Count	Response %	Response Count
To gain a qualification	74	35	19	9
For your own interest	30	14	17	8
To improve patient care	51	24	41	19
As the lead	21	10	15	7
As part of a team	49	23	52	24
Never been involved	8	4	28	13

Of interest is that nineteen (n=46=41%) stated they were currently undertaking research 'to improve patient care'.

Figure 3 illustrates the percentages of those who felt they had made changes to practice as a result of research by others or themselves.



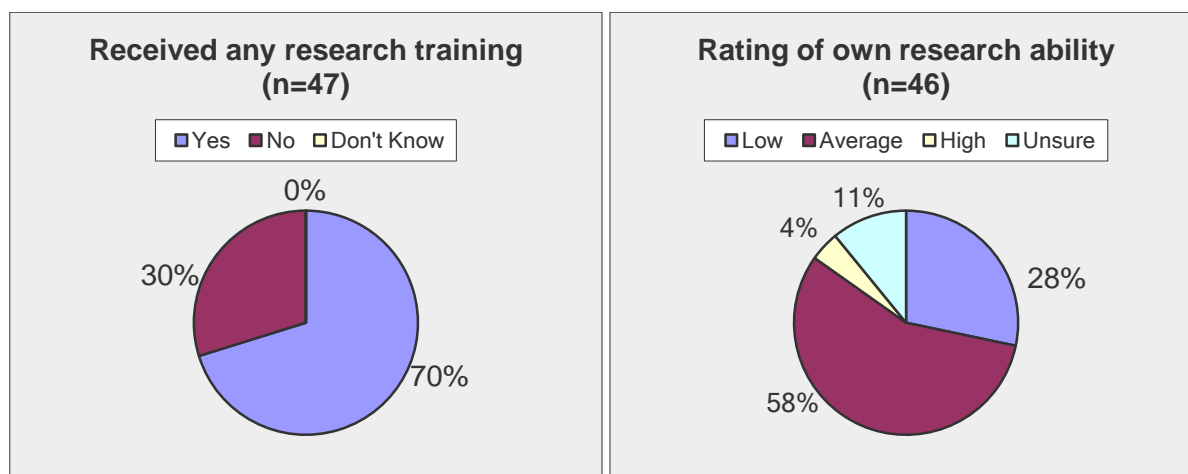
**Figure 3: Changing Practice:
owing to reviewing work of others or by own research**

Experiencing the Research Role of the Consultant Radiographer

When the impact of length of time in post was investigated relative to the introduction of changes to practice, of those who have been in post for five years or more, ten (n=11=91%) had changed practice owing to reviewing the work of others and eight (n=11=73%) had made changes to practice owing to research they had conducted. This is higher than the overall group in the 'yes' categories.

3.2.2.3 **Training and Ability**

Figure 4 highlights if respondents felt they had received research training and the rating of their research ability. Thirty three (n=47=70%) stated they had received research training. Nineteen commented that this was as part of a postgraduate qualification. Of interest is that five respondents commented they had received *Good Clinical Practice (GCP)* (DH, 2005) research training.



**Figure 4: Training and Ability:
received any research training and rating of own research ability**

The cross tabulation data of those who have been in post for five years or more showed that nine (n=10=90%) stated they had received research training.

Experiencing the Research Role of the Consultant Radiographer

The cross tabulation data of those with a Master's degree qualification showed that eleven (n=37=29%) felt they had not received any research training.

Comparisons for training across the three filters of main practice were made. Fifteen in breast imaging (n=21=71%) stated they had received research training, six (n=21=29%) had not. Six in ultrasound (n=8=75%) stated they had received research training, two (n=8=25%) had not. Seven in radiotherapy and oncology (n=8=87%) stated they had received research training, one (n=8=13%) had not, and three of these seven (n=8=38%) commented they had received GCP training.

Thirteen of the whole group (n=46=28%) stated their research ability was 'low':

- Eight in breast imaging (n=21=38%);
- One in ultrasound (n=8=12%);
- Two in radiotherapy and oncology (n=8=25%)

The majority (eighty two) of the whole group (n=46=56%) felt their research ability was 'average':

- Ten in breast imaging (n=21=47%);
- Seven in ultrasound (n=8=88%);
- Four in radiotherapy and oncology (n=8=50%)

Two of the whole group (n=46=4%) felt their research ability was 'high'.

- None in breast imaging;
- None in ultrasound;
- One in radiotherapy and oncology (n=8=12%)

Experiencing the Research Role of the Consultant Radiographer

In addition, the cross tabulation data of those with a Master's degree qualification showed that twenty two (n=36=61%) rated their research ability as average, seven (n=36=19%) low, two (n=36=5%) high, and five (n=36=15%) were unsure.

3.2.3 **Section 3: Research Activity**

The objective for Section 3 was to investigate the level of research activity; specifically focussing on allocated time for research.

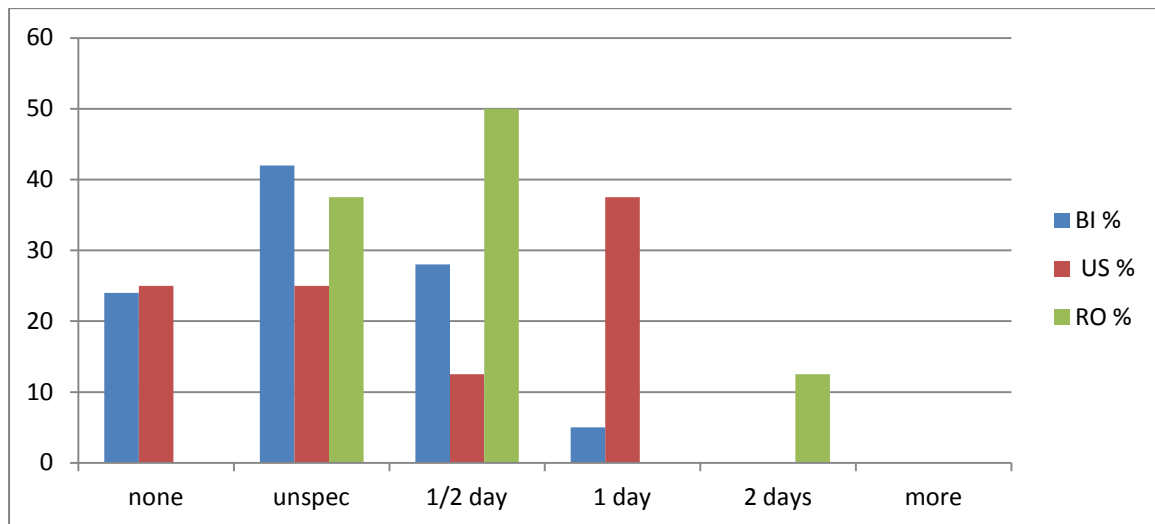
3.2.3.1 **Time allocation for research**

Twenty eight (n=46=61%) stated they received 'no', or an 'unspecified', time allocation for the research element of their role.

The most common allocated time for research within a week was ½ a day, thirteen (n=46=28%); one person used 2 days a week; no-one used more than 2 days a week.

As illustrated in *Figure 5* the number of days allocated for research across the main disciplines varied.

Experiencing the Research Role of the Consultant Radiographer



(BI = breast imaging; US = ultrasound; RO = radiotherapy and oncology)

**Figure 5: Time Allocation for Research:
number of days allocated for research across main disciplines**

Fourteen in breast imaging (n=21=66%) had 'no', or 'unspecified', research time in a week; the most common allocated time in a week for six (n=21=28%) was half a day. Four in ultrasound (n=8=50%) had 'no', or 'unspecified', research time in a week; the most common allocated time in a week for three (n=8=37%) was 1 day. Three in radiotherapy and oncology (n=8=37.5%) had 'no', or 'unspecified', research time in a week, one person had 2 days a week (n=8=12%); the most common allocated time in a week for four (n=8=50%) was ½ a day.

The cross tabulation data revealed that nine (n=20=45%) of those who stated research should be a core domain had 'no', or 'unspecified', research time.

When asked "What do you feel you could do to increase research activity", fifteen (n=43=34%) of the main group wanted 'ring-fenced' or protected research time, as illustrated by these comments:

Experiencing the Research Role of the Consultant Radiographer

“Allocate protected time to undertake research, currently the time gets taken with clinical / admin jobs and research comes last.”

“Current workload prohibits research activity. I have expressed interest to all appropriate levels of management but not able to gather protected time.”

A further eight (n=43=18%) felt reducing the clinical aspect of their role was required, as indicated below:

“Always short staffed and too much clinical work which takes priority so not much time for research.”

“Reduce clinical activity. Put research on an equal priority footing with other aspects of the job.”

“Be more assertive in my department and not agree to extra clinics...but difficult to say ‘no’ when patients are involved.”

“Reduce my clinical commitment.”

“Clinical work and management of it constantly eats into research time.”

Four (n=43=9%) felt that more research experience and confidence would help, remarking:

“Attend more courses.”

“Support and mentoring.”

“Gain experience of research and be given support to carry out role.”

“Very daunting step up from audit to true research. I undertake audits continually. I need some inspiration of what to research.”

The remaining three responses suggested that links with academia would be beneficial (n=2), and that a “successful funding application” would help financially (n=1).

Experiencing the Research Role of the Consultant Radiographer

When asked “*What do you feel the SCoR could do to increase research activity*”, four (n=34=11%) indicated a need for ‘protected time’, as illustrated by:

“Mandatory reduction in clinical practice.”

“Encourage protected research time as part of consultant’s remit.”

“Fighting for dedicated time.”

“Encourage employers to see the benefits of allocated protected research time, including time to publish and present (currently done in own time).”

Three (n=34=8%) indicated that hearing from others in the profession who had been successful in doing research would be helpful, as indicated by the following comments:

“Talks by radiographers who are doing radiology (sic) research so that it is not so much of a mystery.”

“Research needs to be more integrated into our work in the same way it is in other professions. Maybe include a presentation in each study day given by a clinical person, doing their own research to show that we can do it!”

“Maybe ask radiographers who have done research to present at study days to let others know that it is possible!”

Six (n=34=17%) commented they were unsure what the SCoR could do to assist.

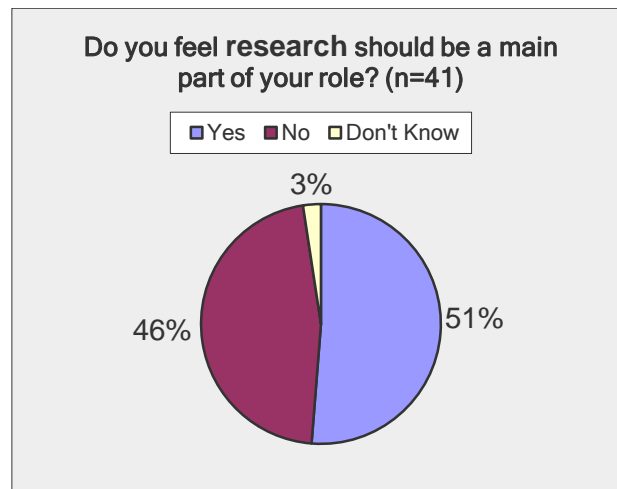
Four (n=34=11%) commented they felt the SCoR did a lot already and provided support, although one did remark:

“I think that the support is probably already there, just not being accessed, so greater emphasis on the mechanisms of accessing this support.”

Experiencing the Research Role of the Consultant Radiographer

3.2.3.2 Research as a core domain

Figure 6 illustrates the diversity of opinion as to whether research should be a core domain of consultant radiographic practice. Of note is that nearly half of the respondents to this question felt research should not be a core domain.



***Figure 6: Should Research be a Core Domain?
percentage of group who felt 'yes' or 'no' that research should be a core domain***

When broken down by modality, as seen in *Table 8*, it was revealed more of the breast imaging group felt research should not be a core domain. Overall, more in ultrasound and in radiotherapy and oncology felt research should be a core domain.

Experiencing the Research Role of the Consultant Radiographer

Table 8: Should Research be a Core Domain?: percentage of group who felt 'yes' or 'no' that research should be a core domain across main disciplines

Research should be a main part of the role	Response BI % (n=17)	Response US % (n=8)	Response RO % (n=6)	Response Overall % (n=41)
Yes	41 (7)	63 (5)	66 (4)	51 (21)
No	59 (10)	37 (3)	17 (1)	46 (19)
Don't Know	0	0	17 (1)	3 (1)

(BI = breast imaging; US = ultrasound; RO = radiotherapy and oncology)

The cross tabulation data showed that of the twenty one who stated research should be a core domain, seventeen (81%) had a Master's degree qualification.

Of note, this question recorded the greatest number of non responses on the questionnaire.

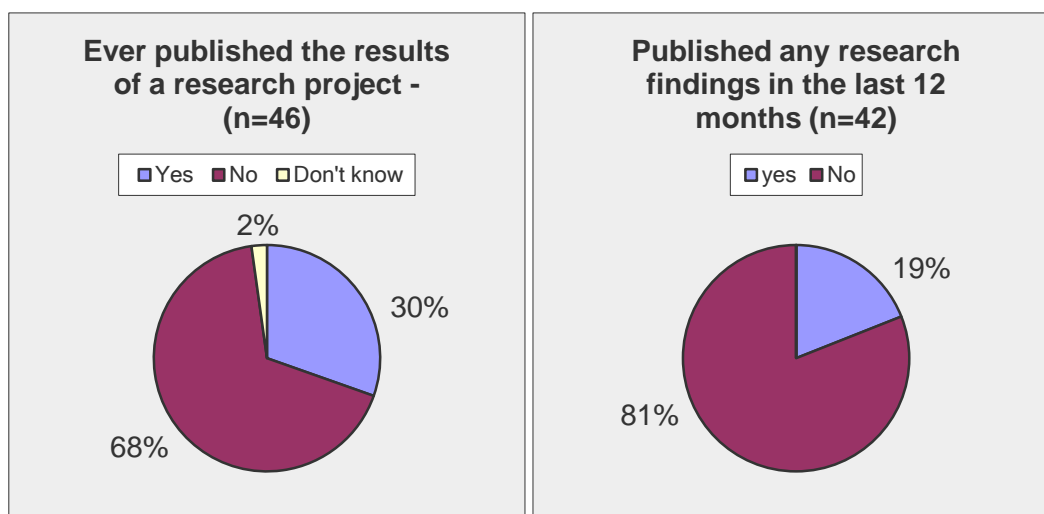
3.2.4 Section 4: Research Publication and Presentation

The objective of Section 4 was to determine the impact of any research undertaken; focussing specifically on presentation and publication records.

3.2.4.1 Publications

Figure 7 illustrates the variation across those who had 'ever published' and those who have published 'in the last twelve months'.

Experiencing the Research Role of the Consultant Radiographer



**Figure 7: Publication records:
number of respondents who have 'ever' published' and
published in the 'last 12 months'**

Thirteen (n=46=28%) stated they had presented research findings (as an oral paper at a conference/event) in the last six months. Thirty two (n=46=70%) had never presented.

Exploring the data further showed that:

- Of the fourteen who stated they had published, 50% had been in-post five or more years.
- Twenty two (n=36=61%) who had a Master's level qualification had never published any research work and twenty four (n=32=75%) had not published in the last twelve months.
- Fourteen (n=21=66%) who felt research should be a core domain had never published any research work. Five had published (n=19=26%) in the last twelve months.

Experiencing the Research Role of the Consultant Radiographer

When broken down by modality, as seen in *Table 9*, variation in publication records can be noted.

Table 9: Publication Records: number of respondents who have published ‘ever’ and in ‘last twelve months’ across main disciplines

Ever published	Response BI % (n=21)	Response US % (n=8)	Response RO % (n=8)	Response Overall % (n=46)
Yes	24 (5)	37.5 (3)	62.5 (5)	30 (14)
No	76 (16)	62.5 (5)	25 (2)	67 (31)
Don't know	0	0	12 (1)	3 (1)
Published in the last year	Response BI % (n=19)	Response US % (n=7)	Response RO % (n=7)	Response Overall (n=42)
Yes	5 (1)	43 (3)	43 (3)	19 (8)
No	95 (18)	57 (4)	57 (4)	81 (34)
Don't know	0	0	0	0

(BI = breast imaging; US = ultrasound; RO = radiotherapy and oncology)

3.2.4.2 Effect of research on practice

In response to “Do you feel research you have undertaken has affected your practice?”:

- Thirty two (n=45=71%) felt that it had done so.
- Three (n=45=7%) felt that it had not affected practice.
- Three (n=45=7%) did not know if their research had affected practice.

Experiencing the Research Role of the Consultant Radiographer

The cross tabulation data showed that:

- Eight (n=11=73%) who had been in post for five years or more felt research they had undertaken had affected their practice.
- Fourteen (n=20=70%) who felt research should be a core domain also felt research they had undertaken had affected their practice.
- Twelve (n=14=85%) of those who had ever published felt the research they had undertaken had affected their practice.

In response to a free text section “As a consultant practitioner how do you lead research?”, seventeen (n=41=41%) stated they did not feel they lead research in their department; owing to lack of opportunity, skills, or time, as shown by a selection of comments:

“I have never had time to do any.”

“Not asked to do so under current job description. I am at present 100% clinical due to service need.”

“I don't lead it. I am part of a research team.”

“I am clinical lead, therefore we discuss proposals and I allocate time for radiologists to perform their part of research project.”

“I am not taking the lead at present and feel I would require more knowledge and skills to do so.”

“I am not able to offer advice to others as I feel my own knowledge on the subject is somewhat lacking.”

I don't lead research yet - my current role is collaborative but I aspire to lead.”

“As a clinical specialist I was more active in research than I am as a consultant. I feel very frustrated by this as I hope as a consultant I would lead on research.”

Experiencing the Research Role of the Consultant Radiographer

Eleven (n=41=27%) felt they did take the research lead and encourage and support other staff, as indicated by the following selection:

“Supporting and advising on proposals, looking for funding possibilities, looking for opportunities to increase the evidence base.”

“Make others aware that you are undertaking research and that it can have a positive impact on patient care, along with a sense of a ‘job well done’ for the research participants.”

“Encouragement to other staff, both radiographers and registrars. Keep attuned to potential research projects during my clinical practice and offer these ideas to others. Act as a signpost to point others in the right direction for help.”

“I am responsible for introducing research into radiographer practice and involving as many of the staff as possible. I see part of my role is to encourage by example and open research opportunities to as many radiographers in the department as possible.”

“I am currently leading the research aspect by trying to link up with others and also aiming to sort out ethics in my trust for research proposals.”

“Developing new research, supporting research activities of others, leading R&D for radiology, sitting on Trust R&D committee.”

“I lead by encouraging those working in specific areas to develop ideas and questions and help them to develop their research projects. Taking an idea and taking the research forward with others who are unsure or lack confidence or research knowledge.”

Five (n=41=12%) felt they were more active in audit than research. Four (n=41=9%) felt their role was to educate others in research and to present work.

In response to *“What do you feel is the context of research in your role?”*, nineteen (n=38=50%) felt it was to improve patient care and improve practice. As indicated by the following selection of comments:

Experiencing the Research Role of the Consultant Radiographer

“Research within clinical practice the results of which will improve service delivery and patient care.”

“To improve practice and patient experience.”

“Research should be used to enhance existing practice and to identify areas practice can be improved.”

“Clinically and professionally based. Ensuring that we operate as a department in the most efficient way possible while maintaining high clinical standards and a patient focussed approach.”

“Help provide the best care/patient experience for patients whilst optimising diagnostic quality in a speciality that is constantly changing due the development of technology.”

“Vital - major part, underestimated, underutilised.”

Six (n=38=1%) stated that ‘research was not a core part of their role’ or they did not have an opportunity to undertake or lead research, as shown by the following remarks:

“Research is not given a high priority in my job plan.”

“Very important but currently has a minimal role.”

“If I had opportunity and the support (from my own department/trust) to research, I would link this to improving services or patient care.”

“It is an activity that helps to underpin what we do in clinical practice and participation is vital to improve our service and the care we give. But I don’t see it as a main core.”

Many of the free text comments provided an overview of the strengths of feelings and attitudes towards the research core domain and in particular the barriers to it happening. These were followed up in more detail with individuals at the interview stage.

Experiencing the Research Role of the Consultant Radiographer

3.2.5 Section 5: Opinion

The objective of Section 5 was to elicit opinions and attitudes towards research and professional activity.

Analysis of eighteen Likert scale agreement/disagreement statements revealed four items of consensus across the whole group, as illustrated in *Table 10* (Based on an idea by Jinks and Chalder, 2007).

Table 10: Statements of Consensus: responses ‘agreed with’ or ‘neutral’ on Likert scale statements across all respondents

Statement	Responses	Consensus or Diversity
Research provides the evidence to direct patient care n=44	22 strongly agree 22 agree	Consensus
Using research information is an integral part of my role n=44	21 strongly agree 20 agree 3 neutral	Consensus
My actions are based on an evidence base and research n=43	15 strongly agree 27 agree 1 neutral	Consensus
I change my practice to reflect the evidence base and new research outcomes n=44	13 strongly agree 29 agree 2 neutral	Consensus

Fourteen statements produced diversity across the whole group as illustrated in *Table 11* (Based on an idea by Jinks and Chalder, 2007).

Experiencing the Research Role of the Consultant Radiographer

Table 11: Statements of Diversity: responses with mixed responses on Likert scale statements across all respondents

Statement	Responses	Consensus or Diversity
Leading research is an integral part of my role n=44	9 strongly agree 12 agree 10 neutral 10 disagree 3 strongly disagree	Diversity
Doing research is an integral part of my role n=44	11 strongly agree 21 agree 3 neutral 7 disagree 1 strongly disagree	Diversity
I feel I have received sufficient training to understand research findings n=44	7 strongly agree 18 agree 13 neutral 6 disagree	Diversity
I feel I have received sufficient training to undertake research n=44	4 strongly agree 17 agree 15 neutral 8 disagree	Diversity
I feel I have received sufficient training to lead research n=44	2 strongly agree 10 agree 12 neutral 18 disagree 2 strongly disagree	Diversity
My other roles are more important than research n=43	7 strongly agree 14 agree 14 neutral 8 disagree	Diversity
Research leads should be medical staff and not radiographers n=44	1 agree 8 neutral 15 disagree 20 strongly disagree	Diversity
I do not have the time to do research n=44	8 strongly agree 16 agree 13 neutral 7 disagree	Diversity
I am unable to implement research findings in my department n=43	2 agree 12 neutral 27 disagree 2 strongly disagree	Diversity
I have support from my radiographer colleagues to undertake research n=44	5 strongly agree 17 agree 18 neutral 4 disagree	Diversity
I have support from other professionals in my field (i.e. physicians, physicists) to undertake research n=43	8 strongly agree 18 agree 12 neutral 4 disagree 1 strongly disagree	Diversity

Experiencing the Research Role of the Consultant Radiographer

I have support from my line manager to undertake research n=44	8 strongly agree 20 agree 11 neutral 3 disagree 2 strongly disagree	Diversity
I feel my role is one of research leadership rather than doing research myself n=43	8 agree 19 neutral 14 disagree 2 strongly disagree	Diversity
I feel I undertake service evaluation rather than research n=44	4 strongly agree 15 agree 16 neutral 9 disagree	Diversity

Regarding the statements “*I feel I have received sufficient training to undertake research*” and “*I feel I have received sufficient training to lead research*”: of interest is seven (n=35=20%) with a Master’s level qualification did not feel they had received sufficient training to undertake research and sixteen (n=35=46%) felt they had not received sufficient training to lead research.

Regarding the statement “*My other roles are more important than research*” there was variation across breast imaging, ultrasound, and radiotherapy and oncology, as shown in *Table 12*. Thirteen in breast imaging (n=21=62%) felt that the other aspects of their role were more important than research; this compares to 48% (21, n=43) of the whole group. Four in ultrasound (n=7=57%) felt that the other aspects of their role were more important than research. Three in radiotherapy (n=8=37%) did not agree that the other aspects of their role were more important than research; this compares to 18% (8, n=43) of the whole group.

Experiencing the Research Role of the Consultant Radiographer

Table 12: My other roles are more important than research: responses across disciplines

'My other roles are more important than research'						
	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Response count
Option BI	6	7	5	3	0	21
Option US	1	3	1	2	0	7
Option RO	0	1	4	3	0	8

(BI = breast imaging; US = ultrasound; RO = radiotherapy and oncology)

3.2.6 Section 6: Research Support

The objective of Section 6 was to focus on possible barriers and facilitators to research in the clinical setting.

3.2.6.1 Aids to successful clinical research

As seen by *Table 13* respondents were asked to rank from 1 (most important) to 10 (least important) what they felt assisted successful clinical research (n=43).

Experiencing the Research Role of the Consultant Radiographer

Table 13: Aids to Successful Clinical Research

Ranking 1 = most important 10 = least important	Aids to successful clinical research (n=43)
1	Research skills
2	Interest
3	Dedicated time
4	The support of management
5	Availability or resources (i.e. databases, journals)
6	Collaboration with an HEI
7	The support of colleagues
8	Research mentorship
9	Supporting infrastructure (i.e. admin and research support)
10	Financial backing

(Most popular as ranked on a scale selection)

Skills, interest and time ranked from 1st to 3rd as the most significant aids. 'Financial backing' ranked last in the rated scale.

In response to the free text comment "*What do you feel are the three main factors that facilitate good quality research?*" the top three rankings as per grouped comments were:

- Dedicated time (19);
- Skills and knowledge of the researcher (13);
- A well defined research question (10).

Experiencing the Research Role of the Consultant Radiographer

This was followed by a 'definite link to service improvement/relevance to practice' (11), 'support from others' (9) and 'good methodology' (6), as shown by *Table 14*. (Other less frequent responses are not recorded on the table.)

Table 14: Factors that Facilitate Good Quality Research

Facilitator	Frequency (n= 40) <i>more than one answer given</i>
Dedicated time	19 (47%)
Skills and knowledge of the researcher/ability	13 (33%)
Well defined research question	10 (25%)
Definite link to service improvement/relevance to clinical practice	11 (27%)
Support from others	9 (22%)
Good methodology and analysis	6 (15%)

(Free text comments by respondents grouped)

3.2.6.2 Barriers to research

In response to the free text comment “*What do you feel are the three main barriers to you undertaking research?*” the top three rankings as per grouped comments were:

- Lack of time allocation (33);
- Lack of skills/experience (13);
- Clinical workload (10).

This was followed by 'confidence' (8), 'funding' (8), and 'lack of support' (6), as shown by *Table 15*.

(Other less frequent responses are not recorded on the table.)

Experiencing the Research Role of the Consultant Radiographer

Table 15: Barriers to Research

Barrier	Frequency (n= 41) more than one answer given
Lack of time allocation	33 (80%)
Lack of skills/experience	13 (32%)
Clinical workload and other priorities	10 (24%)
Confidence	8 (19%)
Funding	8 (19%)
Lack of support	6 (15%)

(Free text comments by respondents grouped)

3.2.6.3 Culture and impact

In response to rating the research culture at their department:

- Ten (n=43=23%) stated the research culture was 'good';
- Seventeen (n=43=40%) stated the research culture was 'average';
- Sixteen (n=43=37%) stated the research culture was 'poor'.

In response to the free text comment, "*What do you feel is the impact to your department of doing research?*" the top three grouped responses, as shown by Table 16, were:

- Improving quality of service and delivery of care (17);
- Increased credibility and reputation - a raised profile (10);
- Makes the job more interesting (5).

(See Appendix 15: Additional free text comments from questionnaire)

Experiencing the Research Role of the Consultant Radiographer

Table 16: Impact of Research on a Department

Impact of research to your department	Frequency (n= 38) <i>more than one answer given</i>
Improving quality of service and delivery of care by implementing proven research findings	17 (45%)
Increased credibility and reputation - raised profile	10 (26%)
Makes the job more interesting	5 (17%)
Improved job satisfaction	3 (8%)
Helps attract the best staff	3 (8%)
Improves team working	3 (8%)
Income generation	3 (8%)
Improves motivation	3 (8%)
Promotes culture of research and learning	2 (7%)
Increases radiographer confidence	2 (7%)
No impact	2 (7%)

(Free text comments by respondents grouped)

In response to the free text comment, “*What do you feel is the impact to the profession of doing research?*” the top grouped response, as shown by Table 17, was:

- Raises profile and status of the profession (n=21).

(Other less frequent responses are not recorded on the table.)

(See Appendix 15: Additional free text comments from questionnaire)

Experiencing the Research Role of the Consultant Radiographer

Table 17: Impact of Research to the Profession

Impact of research to the profession	Frequency (n= 40) more than one answer given
Raises profile and status of the profession	21 (52%)
Evidence based practice	4 (10%)
Improves clinical practice	3 (7%)
Encourages recruitment	3 (7%)
Protects loss of practice areas e.g. ultrasound	3 (7%)
Professional respect	2 (7%)

(Free text comments by respondents grouped)

A summary of the main group characteristics from the questionnaire can be seen on *Table 18*; highlighting differences between the three main modalities of practice.

Experiencing the Research Role of the Consultant Radiographer

Table 18: Questionnaire Summary of Main Group Characteristics: key responses across main disciplines

	Less than 2 years in post	More than 5 years in post	Have a Master's degree	Research training 'yes'	Research ability rated as 'low'	Allocated research time in a week 'yes'	Research should be a main part of role 'yes'	Ever published 'yes'	Published in the last year 'yes'
Breast Imaging n=22	7 (32%)	6 (27%)	16 (73%)	15 (68%)	8 (36%)	7 (32%)	7 (32%)	5 (23%)	1 (5%)
Ultrasound n=9	3 (33%)	0 (0%)	7 (77%)	6 (66%)	1 (11%)	4 (44%)	5 (55%)	3 (33%)	3 (33%)
Radiotherapy Oncology n=8	1 (12%)	3 (38%)	7 (87%)	7 (87%)	2 (20%)	5 (62%)	4 (50%)	5 (62%)	3 (38%)
Whole group n=50	17 (34%)	11 (22%)	38 (76%)	33 (66%)	13 (26%)	19 (38%)	21 (42%)	14 (28%)	8 (20%)

*(BI = breast imaging; US = ultrasound; RO = radiotherapy and oncology)
(Percentages for whole number population who responded to questionnaire rather than individual question n values)*

Experiencing the Research Role of the Consultant Radiographer

3.3 **SUMMARY OF CHAPTER**

This chapter has reported the main questionnaire results.

The main findings were:

1. Those newer in-post tended to be in breast imaging and ultrasound modalities.
2. Not all consultant radiographers had a Master's degree and none had Doctorate level.
3. 84% (n=46) had been involved in research planning and proposal writing.
4. 21% (n=47) had previously been a research lead; 15% (n=46) were currently a research lead.
5. 28% (n=46) rated their research ability as 'low'.
6. 61% (n=46) had 'no', or an 'unspecified', time allocation for the research element of their role.
7. 46% (n=41) felt research should not be a core domain.
8. 68% (n=46) had never published.
9. There was diversity of opinion on the agreement/disagreement statements across modalities.
10. Main facilitators to research were stated as: time; skills and knowledge of the researcher; a well research defined question.
11. Main barriers to research were stated as: lack of allocated time; lack of skills/experience; clinical workload.

Experiencing the Research Role of the Consultant Radiographer

The next chapter will report on the interview results, which explore some of the data raised at the questionnaire stage in further detail and at a more individual level.

CHAPTER 4

INTERVIEWS

4.1 INTRODUCTION TO CHAPTER

The following chapter reports the analysis of the interview component of this study, undertaken between 5th March and 21st May 2012, and intends to provide an understanding which individuals give to undertaking research as part of their role.

4.2 MAIN RESULTS

Using ‘*The Framework Approach*’ (as described in the Methodology Chapter, *Figure 1*) interview transcripts were collapsed into ten theoretical categories.

The results are reported as per the ten theoretical categories and the thirty four themes within these, as shown on *Table 19*.

The results record the twenty five interviewee individual attitudes with regard to undertaking research as part of their role. All interviewees ‘voices’ are represented in the following quotes as equally and fairly as possibly across all categories.

More detailed interview quotations can be found in *Appendix 10*.

Although reported separately to highlight the ten theoretical categories it is important to note that the categories are not ‘stand alone’ but interact.

Experiencing the Research Role of the Consultant Radiographer

Table 19: The Ten Theoretical Categories

THEORETICAL CATEGORY	THEMES
THE ROLE	<ul style="list-style-type: none"> • Research as a core domain • Leadership, control and autonomy • The clinical role
QUALIFICATIONS AND TRAINING	<ul style="list-style-type: none"> • Research capability • Lack of confidence to do research
AN UNDERSTANDING OF RESEARCH	<ul style="list-style-type: none"> • What is clinical research? • What actually counts as research? • How does research affect practice?
RESEARCH ACTIVITY	<ul style="list-style-type: none"> • Publication record • Research user • Feedback to practice
LACK OF TIME	<ul style="list-style-type: none"> • Real lack of time • Perceived lack of time • Job plan
RESEARCH COLLABORATION	<ul style="list-style-type: none"> • HEIs <ul style="list-style-type: none"> ◦ Research link ◦ Teaching only • Other AHPs/professions • Research radiographers
SUPPORT	<ul style="list-style-type: none"> • Consultant radiographer providing support to others • Managerial support to consultant radiographer • Other radiographers support to consultant radiographer • Clinicians support to consultant radiographer • Rivalry
RESEARCH CULTURE	<ul style="list-style-type: none"> • None • Acceptance • Interaction
PROFESSIONAL ISSUES	<ul style="list-style-type: none"> • Succession planning • Pushing boundaries • Traditional influences
FEARS AND FEELINGS	<ul style="list-style-type: none"> • Making excuses • Defensive • Apologetic • Concerned • Feelings of inadequacies • Isolated

Experiencing the Research Role of the Consultant Radiographer

4.2.1 **The Role**

Themes

- Research as a core domain
- Leadership, control and autonomy
- The clinical role

4.2.1.1 **Research as a core domain**

Twenty of those interviewed (80%) regarded the four core domains as integral to the ethos of the consultant radiographer role, as determined in the 'Advance Letter' (DH, 2001):

- expert clinical practice;
- professional leadership and consultancy;
- practice and service development, research and evaluation;
- education and professional development.

The core domains for these twenty were noted as satisfying an individual desire to have attained a professional pinnacle, as highlighted by:

"... it was the opportunity and the job itself and the opportunity to sort of extend the role and be involved with and achieving change ..." (Interview 02)

"I think I suppose it's some sort of ambitious drive that you want to get to the top of, and want to fulfil your potential within, your profession." (Interview 03)

Many of those interviewed, however, stated that they were unable to undertake all four core domains of the role; usually directly related to a demanding clinical workload. For a few, this raised personal concerns as they felt the four domains should be in place and they needed to display they had undertaken them, as illustrated by:

Experiencing the Research Role of the Consultant Radiographer

“I would say I try to. And I’m well aware and my line manager’s well aware that those are the things that I should be doing and I do strive to do that. And we’ve done a job plan that in theory should reflect that, but in practice it’s very difficult to achieve ... So I do strive to do the four parts of the job, but some like flow and some are less umm emphasised than they should be.” (Interview 03)

Undertaking of the research core domain was noted as the hardest domain to achieve, as noted by:

“It’s been a bit more sketchy than I really wanted.” (Interview 04)

“... it doesn’t get that much time and attention, the research bit ... I really do struggle to fit it in around the other responsibilities ...” (Interview 08)

Twenty (80%) of those interviewed felt research should be a core domain of the role.

“Oh, I do yes [research as a core domain], because how can you develop your service? How do you know what areas you need to look at to develop your service and to develop your own staff? I think one of main roles of the consultant radiographer is to develop the skills you have in other staff. Not necessarily the advance practice skills but other skills, you know, generate enthusiasm in people to do audit and research ...” (Interview 01)

“I think the research ... if you didn’t have research we wouldn’t be able to constantly improve our practice and know that we’re working to the best possible end for the patients ... I think just to sit on your laurels is not the way to go.” (Interview 06)

“... I would be hugely disappointed [if research was not a core domain]. Hugely disappointed. ... But then, it goes back to my previous point really then about what is a consultant radiographer all about?” (Interview 18)

“I think it should be a core domain. I think there needs to be an ability to undertake research ... I think to be within a consultant position, you need to be able to be, even if you’re not undertaking regular research, you need to be able to evaluate it and to appreciate, you know, what’s good and bad about practice.” (Interview 22)

A few felt the removal of research from the role would mean professional regression, as noted by:

Experiencing the Research Role of the Consultant Radiographer

“... I think it would devalue the role if you know, the dimensions were changed ... I hope the people are going to be in this role for a long time and just to have it more clinical, I think after not very long, it would soon become apparent that, you know, a person, an individual could get to that level requires, you know, more than just to be a clinical workhorse, really.” (Interview 09)

One even commented that the research component and the mix of the four domains was what distinguished the role from an advanced practitioner.

“... I think if we don't have these things, if we don't have this level, you know, sort of the academic level that's backed up by an MSc, you know. And if we can't demonstrate that we are doing these things and are supposed to be part of the role, I think it's dumbing it down, you know. And ... if you're not doing these things, you are in effect working as an advanced practitioner and ... we have to be able to demonstrate that there is a difference between the two.” (Interview 18)

However, others were struggling to undertake research owing to other work pressures and sometimes a lack of support for that aspect of their role; especially high clinical demands such as coverage of clinics.

“... if you read my job description, which is a very in-depth job description, it's got all these elements in it that I struggled to meet because of my clinical workload.” (Interview 09)

“... there's still a lack of understanding, I think ... I get this particularly from our Personnel Department who really don't get it, you know ...” (Interview 14)

“... It's whoever ... whichever Trust or whoever is looking at appointing that person, what do they want to have that person the most, or they definitely want the clinical there and they want teaching for the, you know ... teach the juniors or staff ... They're not that bothered about ... are they or are they not bothered about research? ... I mean, like I said, one of our senior colleagues said to me, 'We'll get six of you and get rid of three radiologists'.” (Interview 21)

Experiencing the Research Role of the Consultant Radiographer

Five (20%), four of these were from breast imaging, were adamant that the clinical aspect of their role was their priority and the other domains were secondary and almost superfluous.

“Not really, I mean, is the research part that important to the role? I don’t think it is for some people’s role, you know.” (Interview 10)

“... I feel it’s secondary to what you need to do. It’s slightly important because evidence-based practice is what healthcare is ... It’s one of the foundations of it; it’s what it’s built on ... The main role of a consultant radiographer is a clinical role ... And I feel that research for me, and the consultant radiographers who were employed on the basis as I am, it is secondary. And audit is secondary...” (Interview 12)

“... I don’t feel that it should be for me because if that’s not part of my job and that’s not why I was employed ... But I don’t see the point of wasting my time looking for something to research that doesn’t necessarily need doing.” (Interview 19)

A rather contentious issue broached by three of the interviewees (n=25=12%) was the disclosure that the four domains were included in their job descriptions so that their posts could be banded at the consultant level.

“... because you couldn’t get the consultant post agreed unless they put that in. So it had to be there ... So, they had to put something in there ...” (Interview 10)

“I think we should be challenging the four core domains at the new culture of austerity and trying to make sure that we are working what we’ve got to full potential, and whether it is really feasible for clinically working consultant radiographers ...” (Interview 12)

“Well, if I’m honest, when I had my interview, I was the only one who was interviewed ... On the interview panel, there was a local lady who is the lead for the AHPs and she expressed her concerns to the others on the board that you know, I wasn’t yet there with research. And you know, that’s what the nurses expect that you are doing more research and she acted for nurses as well. But the radiologist and the people who know me were quite happy with what I do. You know, because they’ve said that the level that I work at clinically was, you know, the most important factor in this ...” (Interview 19)

Experiencing the Research Role of the Consultant Radiographer

There was diversity of opinion on the concept for all consultant radiographers' posts to follow a set format with inclusion of the four core domains; with three (n=25=12%) feeling the roles are justifiably very variable.

"... I don't think you necessarily need to be publishing a paper every year to be a good consultant radiographer ..." (Interview 16)

"I think that as consultants, we should be involved in research. To make it a core domain is questionable ... We don't think about consultant radiologists doing that ..." (Interview 20)

A few felt the research element of the role demonstrated career and professional progression and was needed at this level, for example:

"But, you know, these people in post are going to have to utilise, or as you say 'critique' research, if they're going to push the boundaries forward and that my feeling would be if they're not able to do that or not given the opportunities to do that, are they truly in a consultant post by how we've defined it, if you like ... I suppose how I see it, it shouldn't be something where I need to do research to fulfil my core domain. What it should be is I'm doing research to fulfil the development of the role and, you know, the service delivery that this post is about ... All the research I've done has been relevant to the role, the service delivery ... And so it's very integral to the role." (Interview 22)

"... but one of the sort of things that is still true of a consultant radiographer is that that's what you're seen as. That a bit of the cheap labour, you are seen as a radiographer and always will be ... But I think that that (research) puts us on a level ... And how can you keep moving the service forward if you're not evaluating it?" (Interview 23)

4.2.1.2 Leadership, control and autonomy

Moreover, those who expressed higher levels of autonomy and control over their working week were those who appeared more able and more inclined to undertake all the core domains of the role.

Experiencing the Research Role of the Consultant Radiographer

“You know, they’re meant to be trailblazing and pushing the boundaries and I think, to a degree, there needs to be autonomy ...” (Interview 22)

“... You have to take your place with management, research and teaching. You’ve got to be able to do the lot. If you’ve just been applied for clinical, then you can’t be a consultant, I don’t think. Because you haven’t got ... well I personally feel you haven’t got the skills.” (Interview 25)

A few were trying to lead research.

“So I am quite excited. I’m going to act as the PI [Principal Investigator] locally for that study. But that’s being completely driven by myself, you know, and I think the opportunity to do that is there ...” (Interview 22)

Those who described a lack of autonomy and high clinical coverage were those who appeared to be experiencing difficulties in achieving the four core domains:

“And slowly my role increased and I was asked to do more things and then more things. I didn’t actually ask to become a consultant. At one point, I thought I should be paid a bit more than people who don’t do what I do.” (Interview 19)

“You know, it’s very much dependent on annual leave and fixing these things in the department. There is nobody else to fill in for the minimum person so then my autonomy is gone. I fill in for whatever they should be doing.” (Interview 20)

4.2.1.3 The clinical role

For a number of interviewees the proportion of clinical work appeared to be 90-100% with no allocated time for the other aspects of the role.

“I have in my job plan a day a fortnight to do research ... It doesn’t happen because the trouble is because ... so much of my job is clinical.” (Interview 03)

Experiencing the Research Role of the Consultant Radiographer

“But I’ve got a bit stalled with even that because the clinical workload here has become ridiculous and it’s impinging totally on to any time that we would have for research. In fact, I’m a little bit concerned about it, to be honest.” (Interview 04)

The main barrier attributed to a lack of research capacity was the clinical workload creating a lack of time.

“I’m kind of covering every clinic and running around like a bit of a headless chicken, really.” (Interview 09)

“But, you know, although I structured the thing to work as, you know, in all the aspects you expect a radiographer ... a consultant radiographer to work in, the truth is when it comes down to it, the hospital, really, just sees you as a chief reporter ... everyone pays lip service to it; but the fact is, what have ... are you still doing these seven sessions of reporting a week.” (Interview 17)

Furthermore, the high clinical workload was described as a potential for ‘burn out’

“I mean, our work load is horrendous ... Unfortunately I know, from a point of view, often we are appointed and they just want clinical work horses ... But working long hours, never taking lunches, I think, I mean really, if you go out to do research, and I think it’s the quiet time, I could use a bit of breathing time. You can’t keep doing the clinical because, you know, I don’t think that’s right because the patient suffers. And you suffer.” (Interview 25)

However, three (12%) reflected that the clinical workload could be used as a barrier, but in reality it might not be and was rather an excuse not to do research.

“I think some people will hide a little bit behind the clinical and just say, I’m sure they’ll say, I’ve got far too much clinical to do. I can’t do research. Because you know I could do that ... Because if I did that, I would feel that I wasn’t developing in a completely holistic way that I should be. You kind of just get caught up in that, focusing just on the clinical ... I could sit like a zombie, reporting all day long.” (Interview 05)

Experiencing the Research Role of the Consultant Radiographer

“I really enjoy it (the role). The difficulty is that again, as in most of it, the barriers to it sometimes seem insurmountable.” (Interview 11)

“You are much more, much more comfortable in your clinical ... You’re in your comfort zone in your clinical work ... If the department was busy, you can say, ‘Well actually, it’s busy so I better just drop this and do something I’m more comfortable with.’ ... it’s been very easy to stay within your comfort zone.” (Interview 14)

Five (20%), four of these were from breast imaging, again reinforced that the clinical aspect of the role was the reason for their post existing and why they wanted to be consultant radiographers.

“And we were short of radiologists and couldn’t fill the radiology post. I know, it’s definitely that’s the only reason. There’s nothing to do with radiographers wanting to do this, that, or the other. It was purely because they had nobody else to do the work and they had to find a way to get through it, while there was a shortage of radiologists as well.” (Interview 10)

“But I feel my job was given to me for the Trust. I work here for the Trust, and my role is primarily clinical. And I think that it backs it up. Audits and doing my own self-audit of what I’m doing as well is secondary to it, really.” (Interview 12)

“... we’re here to do our jobs.” (Interview 19)

Others mentioned that the clinical aspect of their post was the only domain with an allocated weighting.

“And the clinical work is protected. So, if you work overtime due to clinical work, then you can take that time back but you can’t take it back through any other kind of reason like research or something like that. I mean I think it’s something that without having some time allocation or at least backing for it, then how can you take your job forward and things like that?” (Interview 13)

“I mean the clinical duty is pretty well taken up ... clinical-associated duties could well take up ten sessions a week ... We’re up against government targets the whole time and because of that we have to get the stuff, you know, reported and I’m the source of cheap reporting.” (Interview 17)

Experiencing the Research Role of the Consultant Radiographer

For a few, research was not an aspect of the role they wanted to do or enjoyed doing.

“Whereas, I have to be honest, my heart and soul isn’t in research, it’s in clinical work ... I suppose you haven’t got enough money to spend on people who aren’t doing clinical work.” (Interview 19)

“... I mean we always say you know when you are chatting amongst yourselves that we became consultants because of like the clinical aspect ... That’s why we’re consultant radiographers and not service managers. We also became ... I think the same thing applies to research. We became consultants because we want to be clinical not because we particularly want to be research radiographers.” (Interview 20)

Whilst others emphasised the obligation to ensure the four core domains were covered, and it was part of their role to ensure this happened.

“I mean, for the most part, I sort of think is that consultant radiographers didn’t get ... are no shrinking violets to get there because it’s such a hard road to get there. But also I do think that there is also a group of people out there who were just hoodwinked if you like, into being called, this sounds terrible, into being called consultants. Because they just wanted somebody that they could pay for far less money to just do the day to day graft ...” (Interview 23)

4.2.2 Qualifications and Research Training

Themes

- Research capability
- Lack of confidence to do research

4.2.2.1 Research capability

The topic of Master’s level qualification as a minimum requirement or standard was raised. Some explained how difficult it had been undertaking a Master’s degree

Experiencing the Research Role of the Consultant Radiographer

under a modular system and felt it was unfair how credit across universities had not been given for their work, for example:

“The clinical need overrides the research need a lot of the time. It’s takes you a long time to get to actually finish the new dissertation simply because your having to do the clinical modules and your having to traipse all around the country to get the clinical modules. So actually getting to the end of the dissertation is like climbing a mountain at times.” (Interview 20)

The twenty two (88%) who had undertaken Master’s level learning felt it had developed their skills and capability to undertake research.

“... so the academic side of the academic writing and all that sort of thing was a bit of a ... a bit of ... very, very steep learning curve ... I’ve completed all modules for the MSc. It’s just the dissertation now ... I never critiqued things before but I do now ...” (Interview 15)

“So, it (an MSc) was a hugely steep learning curve to start with to sort of get around the current way of learning and, you know, all of it, referencing and ... I can’t begin to say how much I’ve learnt really doing it.” (Interview 18)

One commented they felt compelled to undertake a higher level of learning so they could support other staff in their development.

“I mean that I knew that I wanted to do it (MSc) because there is, in this department, there are a lot of advanced practitioners and I kind of think if one consultant radiographer has not kind of completed that journey, it’s not setting a very good example of encouraging them to kind of go on and do the same really ...” (Interview 09)

Twenty two (88%) felt quite strongly that consultant practitioners should be educated to at least Master’s level and only holding qualifications lower than this was “watering down” the credibility of the role.

Experiencing the Research Role of the Consultant Radiographer

“Right. You see, I get a bit frustrated actually ... I mean, I don’t think that somebody should be made a consultant radiographer unless they have the MSc because I think that that learning is so crucial really and particularly ... because research is supposed to be one of the arms of a consultant post. Personally, I think if you haven’t done the MSc dissertation, I just don’t think that you have that level really.” (Interview 18)

“And I don’t think that’s right [not having an MSc at this level], I have to be honest. I do not ... because we are watering down the position. Because it’s a huge responsibility and I’m surprised the Trust who has employed them accepted ... Otherwise, I mean from what I can gather in other AHPs they have to have that behind them. So, why are we watering it down? Why are we allowing it to happen?” (Interview 25)

A few commented that it was clear they would not have attained their current position without a Master’s level qualification. For example:

“They would only appoint with an MSc which I think actually is a very good idea ... If I hadn’t got it, I don’t think I would have got the post.” (Interview 25)

4.2.2.2 Lack of confidence to do research

A lack of preparation for the four core domains of the role, especially in undertaking and leading research, left a few feeling rather vulnerable.

“You know, I would say, I really, really wish I had more preparation and just that gradual building up of confidence and skills. So, it’s when I took on this post, I was much more ready and prepared to lead on research, lead on clinical research rather than be slumping about trying to get support and trying to find how I should go about it.” (Interview 05)

“I think confidence, by that I don’t know whether I feel confident enough to start a research project. And the availability, I don’t know of any research partners that I could join ...” (Interview 21)

4.2.3 **An Understanding of Research**

Themes

- What is clinical research?
- What actually counts as research?
- How does research affect practice?

4.2.3.1 **What is clinical research?**

There was a variety of opinion and understanding as to what precisely is clinical research. Several seemed to be interpreting this aspect of the role as a standalone activity and others were perhaps making this more difficult than it needed to be.

“I think it needs to be there but it is definitely the hardest part to fulfil I think unless you’re ... I mean it depends how you define research but you’ve got to be looking at the service development and literature searches, evidence-based practice that has to be the foundation for your role ... But if you call service development and going and looking at other centres and literature searches to develop your own practice, if you call that research then I think that’s very, very easy to.” (Interview 03)

“Where do I put it in my job? And I think one of my problems is actually, I still don’t really know what research is in that way ... When people ask you, do you do research? It’s quite difficult what they want to know.” (Interview 13)

Some appreciated the reasoning for research to be a part of their role as it supported their practice and supported any required change.

“I do think that there’s a strategic planning management side and there’s an academic side, and I think once that academic side comes in with research, the research overlaps into your clinical stuff as well ... I don’t think you can work well clinically unless you’re involved in some ways, or you know what’s current and you know what’s good practice ... a lot of my job is about reading up on what’s best practice and looking at guidelines and scoping about what’s out there and coming up with what to change and coming up with new and constantly changing our schemes of working.” (Interview 06)

Experiencing the Research Role of the Consultant Radiographer

There appeared to be a necessity to promote what research can achieve and to demystify it.

“It is seen as something to do ... or a lot people are scared of it.” (Interview 08)

“Yeah and I think that’s a real barrier, isn’t it? The doing research is just very, very unfamiliar to people.” (Interview 16)

“... anything you could do to break down the myths around research and reduce the scare of it, and just to make it a bit more of a friendlier topic to discuss ... Any way, you can break down the ... you know, the myths around the research, the better, isn’t it?” (Interview 21)

Nearly all of those interviewed remarked that research was the hardest core domain to achieve.

“Sometimes, I do think it’s really difficult to define the domain of research; because I’ve done lots of audit work which obviously is looking at evidence-based practice in your clinical day-to-day job. And with ... I’ve worked with other radiographers on certain audits; so is that breaching into the research domain or is it purely just individuals undertaking research?” (Interview 08)

There was a diversity of opinion as to whether research should be part of the role of a consultant radiographer and the value of research in the role.

“But sometimes, I just feel like they sort of have to prove their existence and they have to produce so much research each year and get funding to things. And it’s almost like they’re scraping the bottom of a barrel to find stuff to do ... obviously it varies because all the consultant roles are just so completely different. I mean we’re all under this one banner, but they’re completely different. And so maybe in some jobs it (research) is important but it isn’t particularly, I wouldn’t say, in mine.” (Interview 10)

Experiencing the Research Role of the Consultant Radiographer

“It depends on what you define as research, and my answer is really no. I’ve done an awful lot of audits more than research ... But the needs of the department insists that we audit an awful lot of what we do, and ... really, it’s where you draw the line of what is the difference between the two, and then I’ll know they’re very distinct and I say I do more audits than anything else ...” (Interview 12)

“But it depends on the thirst for the radiography profession to do research. And I think a lot of the research I see done by radiographers is about radiographers and I think the emphasis has got to change. The research has got to be about clinical practice and patients.” (Interview 16)

4.2.3.2 What actually ‘counts’ as research?

There was diversity of opinion as to what actually ‘counted’ as research activity.

“But it’s thinking I should be doing something a little bit more serious as well and doing, you know, and proper research.” (Interview 03)

“That’s it. You don’t even realise it you’re doing it. Sometimes it’s under another name, isn’t it, you know.” (Interview 10)

Many were actually doing the research core domain but were unaware they were, or did not feel they were doing enough. There was confusion as to the integration of research and practice.

“You know, I mean if we talk about research in the broadest possible way, then yes, we are. But is that ... it’s just in your mind that you’ve got the research that you have to...that has to be published. That’s the kind of research that we’re after rather than ... I mean, even if, you know, going around to 10 different hospitals to find out a practice and bringing it back to your trust that’s all research as well, isn’t it?” (Interview 21)

Experiencing the Research Role of the Consultant Radiographer

4.2.3.3 How does research affect practice?

All of the interviewees felt if they were going to do research they wanted it to have an impact on their practice and was, what they described as, 'worthwhile'.

"That's what I feel; it should be in the job as opposed to pure research-type thing. And it's looking at the whole service where you work, isn't it, and seeing how it can be improved and what the practice is. No ... I mean, certainly that's what, you know my department would value me for is the clinical skills and then identifying something, you know, that needs addressing that we can sort out and change our practice, you know, to improve things for patients, basically." (Interview 10)

Nearly all felt research should be supporting their practice, and that an evidence base for their practice was an obligation.

"You know, we should be informing our practice. So, it's that underlying, embedding. If we're constantly progressive, moving. I think that's probably not appreciated or understood, not well understood at all." (Interview 05)

"Research is absolutely practice and it should be about, part of your job. But it comes with a stigma against it that's it, to make it hard when actually there's so much. And the other thing is a lot of people think, oh, there's nothing to research. And it doesn't have to be about the most complex things actually. It's the little things that make the biggest difference ... It's not rocket science. It's just being able to sell it in the right way. Research is as much around selling as it is about inquiring ... It's actually about persuading others of the idea and after, things will evolve." (Interview 07)

"I think, yeah, it has changed practice and it is ... we confirm practice because I think that's the other thing. It's looking at outcomes ... So I think, you know, it's also about proving, if you like, what you're doing is the right thing as well as looking at new ways of doing things which, I suppose, is the basis of research anyway, isn't it?" (Interview 22)

Some felt this came under the remit of the consultant radiographer.

Experiencing the Research Role of the Consultant Radiographer

“... what I think we should be doing as consultants in terms of coming up with ideas and actually making changes for the future in terms of service development and deliveries.” (Interview 06)

“Now, the whole point of being a consultant, really, was to look at new ways of making things better. That’s the way I saw it, certainly. And, you know, you should be a free thinking person ...” (Interview 17)

However, it was clear that other pressures of the role hindered research from happening and those other priorities came first.

“Oh, yeah. We see the reason. We don’t always have the time to do what we would like to do.” (Interview 20)

Ultimately, a few remarked that it depended on what the service actually wanted from their consultant practitioners as to whether research would happen.

“But it’s one of the things that comes back to sort of what people actually want from a consultant radiographer ... a good many think that they just want somebody that’s there to see that the patients get through, to make sure the targets are being met, to make sure the patients are having a good service. But they ... they must reach a stage where the service is not moving forward, it’s not keeping up with the new incoming techniques. It’s not moving into the new roles, models of practice. It’s new technology that’s passing them by.” (Interview 23)

4.2.4 **Research Activity**

Themes

- Publication record
- Research user
- Feedback to practice

Experiencing the Research Role of the Consultant Radiographer

4.2.4.1 Publication record

Publication and presentation activity caused diversity. A few felt this was something they could do and they were supported to do it.

“Because in fact we can do that.” (Interview 01)

“Definitely encouraged. I definitely know that that is part of my role but it is purely lack of time. And probably, you know, lack of experience doing that.” (Interview 03)

“I would like to perceive them to see the work that I do as worthwhile, but I think that respect has to be earned. And I think the only way that that can be earned is probably by publishing and presenting.” (Interview 04)

A few appreciated that research required extra work to achieve.

“You need to be fairly inspired I think to know that you’re going to write on a subject matter and it be interesting to others.” (Interview 04)

“I think the ones that are successful in research and you know, that go the extra mile in terms of doing conference presentations and all that kind of stuff, it’s inevitable it’s going to encroach on their own time. I think it’s one of those decisions and choices that we have to make.” (Interview 05)

One even commented that:

“You know what I think is we probably are doing the research but because we’re not publishing it ... We are doing research but unless you see it in professional journals, it’s sort of like you’ve not done anything.” (Interview 21)

Others appeared to have less confidence in this aspect of their role.

“I’ve done two presentations but it wasn’t actually on my work. It was more of my role when I was an advanced practitioner and it was a local thing.” (Interview 19)

Experiencing the Research Role of the Consultant Radiographer

4.2.4.2 **Research user**

A minority felt there should be more dissemination of work and journal papers.

“... you know, I think it’s really important for the consultant group ... the consultants to be able to have some way of saying, ‘Have you seen this paper? This is really interesting’.” (Interview 11)

“But actually, we’re not really reviewing new stuff coming out and we should be.” (Interview 14)

Others felt they did this and they based their work in evidence, but perhaps not in an overt manner.

“I mean that’s something that we do all the time. You know, we’re looking at that, we’re looking at all the guidelines that comes out, reviewing that and that’s something that we do as a sort of clinical team in a way, myself, the radiologist are very much involved in that formal kind of professional lead point of view.” (Interview 16)

4.2.4.3 **Feedback to practice**

A few could clearly see the effect on practice from research findings and outcomes, and therefore appreciated the link to their role.

“And I headed up that audit and we drew up a new protocol as a result of that changed our practice. I’ve got a few presentations after that actually.” (Interview 18)

“I think a quite a big component of my job is your service evaluation so there is always something going on even if it’s only small-scale. Even if it’s looking up data retrospectively, we always try to evaluate the service ...” (Interview 21)

Experiencing the Research Role of the Consultant Radiographer

4.2.5 **Lack of Time**

Themes

- Real lack of time
- Perceived lack of time
- Job plan

4.2.5.1 **Real lack of time**

The main barrier stated by all the interviewees was having a lack of time to undertake the research component of their role.

Twelve (48%) described lack of time as a real barrier affecting the research they could undertake. Interviewee four reflected on this a great deal.

“However, quite often that’s eaten into by other things ... I’m finding that quite often there’s an overflow of patients that people want me to do on a Friday afternoon because they see me as being free ... But if you had me to write a job plan down, because I would feel obliged to put a research in on a Friday afternoon, does that make sense? Simply to cover my own back ... And I’m acutely aware that over the past few years, my job has sort of shall we say morphed a bit. And if anybody would look at it today and say, well, where’s the research component? I’m a little bit stuck, if I must be honest ... a dedicated research session. That would help. That would be one thing that would help me.” (Interview 04)

The clinical aspect of the role again came to the fore and was described as the main reason for the role existing.

“I mean I can be pushed, not pushed really but asked to do a lot of extra work and it’s quite hard to say no to that sometimes ... There’s always a patient behind the story where they need doing and how do you say no ... and I’ll have to look at my job description again but it does say something like lead research and stuff but I think it’s just traditional, you know. There’s no way that’s going to happen, you know ...” (Interview 10)

Experiencing the Research Role of the Consultant Radiographer

“... But I don’t have a great deal of time to do research because clinical work really takes over; covering staff ... that special time that you’ve dedicated for research gets taken up an awful lot with catching up with film-reading, doing the extra clinics, covering colleagues.” (Interview 12)

Five (20%) even remarked that any additional work above and beyond their clinical workloads was untenable.

“... It’s about what impact you wanted to have on your general life, I think ... Yeah, it is and I mean I, you know, for example I’ve got home at, I don’t know 7:30 last night and Monday night it was 8:00 o’clock. And, you know, the thought of doing more work on top of that it’s, for me, it’s not manageable.” (Interview 16)

“Yeah, we’re just not really given it the time. For a start, I’m expected to do seven ... ten sessions a week and we just do seven of reporting. If you add the other bits to it and everything that takes more than ten sessions a week, you know? I know that you know we don’t do a nine to five job, but having said all of that, you still have to have a life. I get home at nine, in actual fact.” (Interview 17)

“Well, my job is here to see patients and I work 8 sessions, seeing patients for 6, I don’t have much time left over to do extra things. And every week I work more hours than I should do ... There are always a lot of patients to get through and you know, we struggle to fit everything else into the week ... That there’s just not extra time for that as well.” (Interview 19)

Four (16%) of those who wanted to do research stated it would have to be done in their own time and this would be the only way of fulfilling that core domain.

“Yeah, if I want to do research, it would definitely be on my own time, as I said.” (Interview 17)

“Time, actually, I guess. That’s the biggest killer really. It’s time. I mean, I do, in terms of, you know, the stuff that can be done at home, you know, writing and all of that side of things, I do quite a lot at home really ... I do actually, because I do actually think that when you get to this level actually, you do have to expect some of that [working in own time] and I think, you know, this is in absolutely no way a 9 to 5 job. And I actually just accept that that’s part of the role actually.” (Interview 18)

Experiencing the Research Role of the Consultant Radiographer

“Yeah, we’re talking about two to three hours a week [research in own time]. If we want to achieve anything at all ... And the consequence is our home life.” (Interview 20)

4.2.5.2 Perceived lack of time

A number of those interviewed stated that time was a barrier to research but that often time could be found and that gaining time required good planning management.

“Time. But that’s around planning and expectation. I’m not convinced there are real barriers. I think people make barriers themselves. And I think barriers are often very, an easy excuse. And I don’t mean that in a nasty way ... I mean, actually, when you get down to it, it’s not as hard as it’s perceived. But it’s just made to sound difficult. And I think barriers are often put in the way as an excuse for not doing rather than a sort of real reason why engagement doesn’t really happen ... I mean, everybody, no matter what their job is, time will always be the most challenging thing. But part of that is about managing time.” (Interview 07)

“It’s just its time thing as well, really because I suppose you don’t put enough ... emphasis or priority to research so you do tend not to give it enough ... you don’t put enough time aside to really concentrate on it ...” (Interview 08)

A few admitted that ‘barriers’ can be put in the way to avoid doing research.

“I mean, as most people, I will do anything rather than do this (research). (Laughter). Because we’re clinical people ... is what stops me from doing everything else because I will always do clinical work I will always do that first.” (Interview 11)

“ ... But quite often you know ... I can’t just say it isn’t, I’ve got the time. A lot of it is actually getting the inclination to do it as well. When I come in, if there’s something I can do that’s straight forward, I’ll probably do that rather than something that needs a bit of thought behind it.” (Interview 13)

Experiencing the Research Role of the Consultant Radiographer

A few expressed that research needed to be valued in the same way as other aspects of the role, i.e. if overtime was required to undertake research this should be a valid remuneration claim.

“If it’s on an individual point of view, it would be about this time element again which how to make people recognise that research is as important as you know as actually treating the patient. I think in terms of the people that you know I do find it frustrating the fact that if you go to something that’s kind of research based then you can’t take your time back. But if it’s clinical, you can. And I struggle with that concept ...” (Interview 13)

A few of those interviewed, despite having heavy clinical workloads, managed to achieve a workable system of integrating the research component into their role.

“... As a department, we’ve been quite candid that we’ve set aside one hour a week ... well, actually two hours a week where our lists are not booked. So, actually, you know, commitment-wise, it’s not much because, you know, that’s just set aside week and week and week. You don’t have to sort of go and find the time to do that.” (Interview 14)

“It’s hard to know what the constraints would be elsewhere because I suppose my feeling is if someone comes out with a good idea that potentially can improve services, what can stop them? You know, I don’t have an issue with the time clearly. But I mean I think with an intelligent overview then you can get around that and somehow perhaps fit that into a role, I don’t know.” (Interview 22)

“No [time is not a barrier], it can be but you have peaks and troughs of time. And if you manage a diary well in your work, I mean, I’ve got OCD, so, if it has to happen I’ll make it happen ... But is that not part of it because you do have to be a wee bit flexible? ... I mean sometimes my clinical station there’s not many patients. So, you can use that time. Sometimes there’s a lot of patients and you, you know, you’ll lose a bit of time but it’s about balancing the books. Is that not what usually life’s all about?” (Interview 24)

“Well, there’s time and there’s also enthusiasm.” (Interview 25)

Experiencing the Research Role of the Consultant Radiographer

4.2.5.3 **Job plan**

Having dedicated research time, and managing to integrate research into the role, appeared to be strongly linked to whether or not the respondent had a defined job plan, as emphasised by interviewee one.

“I think that’s probably when it goes wrong with some consultant radiographer roles because they don’t have a job plan ... And I think from what I understand from speaking to other consultants is that they don’t have job plans, but vague job descriptions. I think that’s the big problem ... Importantly with a job plan that’s agreed by your Department, you know you stick to that job plan. My job plan has changed twice since I came because of service needs, but I still keep my two research sessions.” (Interview 01)

Several stated they did have job plans, but these were not adhered to or respected by others.

“I mean my biggest frustration is I have a timetable but that’s not actually what I do which I am addressing because you know, I have a timetable on paper. My timetable looks like, ‘Oh yeah, that’s perfect!’...” (Interview 09)

“So, I’m sort making sure that actually that is, you know, written in black and white and no sort of ambiguity that that’s part of my job ... But, you know, it hasn’t been previously. It’s sort of being there but not really in black and white; to me it was more implied than ... I get that certain sort of time allocation for some other non-clinical duties. But actually, it’s quite hard to describe even what a non-clinical duty is.” (Interview 14)

“It’s [research] in my job description, but there’s no way to facilitate it. There’s nothing being put in to my job description to allow it to happen. It’s ... okay, so it’s part of your job description, but you’ve got to go make it happen yourself. And it’s not knowing how to do that – that is the stumbling block, isn’t it? ... Your job description is just vague, very vague, what they wanted you to do.” (Interview 21)

A few described autonomy and clear leadership in their roles, which meant they could allocate their research time and define their working weeks.

Experiencing the Research Role of the Consultant Radiographer

“I’ve got complete autonomy on my time. So, obviously, if I’m a bit more clinical in one week, then, you take it back the next week. I just balance it myself and it works ... I mean as long as all the work is being done and the results are seen, I’m ... completely autonomous ... I would probably more do it [research] in chunks, you know, a certain question or evaluation that comes up, I would sit and do it and then ... so ... I don’t consciously think of that 0.1 and then, ‘Oh, I’ve done that. I’ll leave next week now.’ I just do what is needed ... whichever part of the ... job I’m doing.” (Interview 15)

“It’s left up to me. I mean I’m very much have jurisdiction over my own job plan in a way ... actually I have a certain proportion of my job plan is meant to be research and therefore, you know, if you like to utilise that time on this study because I feel it’s all benefits to me, my service and the service within the centre. And so the manager was very supportive of that. And so I think to a large degree, I do have a say on, you know, what we take on board and on what research I do.” (Interview 22)

“Completely manage my own diary.” (Interview 24)

“I can do my own thing basically. Well, within confines. Yes, I mean, I have clinics that I have to cover. But basically, nobody tells me what to do. As such, I know what I’ve got to do and I am very much autonomous really.” (Interview 25)

4.2.6 **Research Collaboration**

Themes

- Higher Education Institutions (HEIs)
 - Research link
 - Teaching only
- Other AHPs/professions
- Research radiographers

4.2.6.1 **HEIs**

Those who had linked with an academic collaborator often found it was very helpful, and felt it aided research happening by affording a degree of ‘protection’ or support, and ensured the link between clinical demands and academic research.

Experiencing the Research Role of the Consultant Radiographer

“So it would be mutually beneficial. So they [HEI] are always open to helping us out.” (Interview 02)

“It’s been key to both of us, me and my academic partner. And it’s done us both a lot of favours down the line. I think the big thing with that is that it’s been a research partnership rather than me being the clinical conduit for their research ... We both have got different skills but they contribute equally to the partnership.” (Interview 07)

“And because of the links that he’s [HEI contact] got with other people, you know, that we’ve been introduced to, met people, come across people, we just never would have done otherwise. I felt that the one project we had suggested led him to think of loads of other associated projects for the future. This could potentially keep us going for years!” (Interview 23)

Four (16%) described previous links disappearing, finding it hard to make a break into the HEI environment, or never having made that contact.

“But yeah, the carefully developed links are disappearing.” (Interview 04)

“... it’s difficult to get sort of a relationship I find because people in the university have got all these other own stresses and workloads. And so sometimes, it’s difficult to form a link.” (Interview 08)

“Yeah, but in the university when they’re in academia world. And it’s just on a different planet, really sometimes.” (Interview 10)

“Well I haven’t explored that. But that’s true. That sounds like a really good compromise to work in a collaborative way with higher education establishment. Yeah.” (Interview 16)

Interviewee seven raised the issue that the consultant radiographer needs to be at an education level on a par with the academic partner and supported the view that the consultant practitioners should aspire to Doctorate level education.

“But from a clinical side of that, if you’re expected to work on a par with the academics, then you need to be able to hold your own whether it’s in debate or whether in academic education circles. So, you need to be at a similar level around education regarding at least awareness.” (Interview 07)

Experiencing the Research Role of the Consultant Radiographer

4.2.6.2 **Other AHPs/professions**

Working collaboratively on research projects with other AHPs and professionals did not appear to occur that often. Some recognised that working with others was supportive and mutually beneficial.

“And we’ve done some audits with other disciplines. We’ve done some audits with pathology and surgery as well. And they have also been very positive because I wasn’t sure how they would take working with me. But then, there was no problem. We have found that it has been good for all of us.” (Interview 01)

“Definitely because it’s so good to be part of a team. Because nobody can really skill up in every sort of single thing. You know, research is such a massive thing. And it’s kind of specialised in a way.” (Interview 05)

Again making collaborative links was not always easy.

“If it doesn’t fit in with their line of enquiry and it’s not going to look good in their portfolio. They’re not particularly interested in helping you to do it.” (Interview 20)

4.2.6.3 **Research radiographers**

In diagnostic radiography there appeared to be a lack of understanding by consultant radiographers as to how they could work with a research radiographer and what the roles could offer each other. One interviewee stated she would not know how to work with a research radiographer even if the department had one.

A few even felt the research aspect of the work should come under the remit of the research radiographer, rather than the consultant radiographer.

Experiencing the Research Role of the Consultant Radiographer

“I think ... probably it would make sense if the research radiographer was the driving force; but, I suppose a consultant post as well has some responsibility for driving or leading research activity. They should collaborate on it.” (Interview 02)

In radiotherapy and oncology often the two roles existed side by side. For a few this union worked well, but for others this caused rivalry and professional tension.

4.2.7 **Support**

Themes

- Consultant radiographer providing support to others
- Managerial support to consultant radiographer
- Other radiographers support to consultant radiographer
- Clinicians support to consultant radiographer
- Rivalry (mainly with research radiographers)

4.2.7.1 **Consultant radiographer providing support to others**

All of the interviewees felt that an aspect of their role was to provide support and encouragement to the other radiographers in the department.

“It’s just good to encourage people to do other things.” (Interview 01)

“So some of this is me now encouraging other people ...” (Interview 03)

“So, it’s about how we generate a team that can take forward from the research ideas ...” (Interview 07)

“... very conscious that I need to do my bit really, to try and support the radiographers ... And so, I try and encourage the others to do it as well and say, ‘Come on. If I can do it, you can do it’ ...” (Interview 18)

Experiencing the Research Role of the Consultant Radiographer

A small number of respondents reflected that the consultant radiographer needs to be a role model and display the four core domains of practice so that advanced practitioners can see the potential opportunities for the future.

“... if you are the consultant radiographer of the department, I think that you have got a responsibility to the rest of the radiographers and the advanced practitioners to kind of support them and encourage them to expand their roles and everything as well because otherwise, what’s the difference of having a consultant radiographer and a radiologist, really?... If the consultant radiographer isn’t doing it, then you know, why should the radiographers or the advanced practitioners even do it and ...” (Interview 09)

Others expressed difficulties ensuring role development opportunities occurred.

“Because we’re actually full up at the moment of advanced practitioners; we don’t need anymore and so it’s a bit frustrating for people, so ... I mean, they’re fine towards me but, you know, people would like to do more but it isn’t ever done because the radiographers want to do it, it’s because we have a need.” (Interview 10)

4.2.7.2 Managerial support to consultant radiographer

A few noted having supportive managers, who allowed them to fulfil the four core domains.

“They wanted both the clinical and academic component to the consultant radiographer post and they wanted somebody with the university link for teaching as well.” (Interview 01)

“I think having and I don’t know whether that’s unique, towards having a manager who is able to be forward thinking and does allow a degree of autonomy.” (Interview 22)

Experiencing the Research Role of the Consultant Radiographer

However, the majority stated that there appeared to be a lack of management understanding regarding both their roles and the reasoning for the core domains.

“But I still think a lot of managers don’t really understand the role either. They might choose not to understand it in terms you know, they want just probably clinical work ... When I mentioned research and things, I could see that from the look on her face, she didn’t really fully understand what I was talking about ... it’s not something that’s really hugely expected and I don’t think she would, I honestly do not think she would mind if I didn’t do any at all.” (Interview 05)

“What I don’t and never ever had is managerial support ... So, managerial support, I would say, very poor ... but also I just can’t get anything done because, you know ... managerial. But clinical support, absolutely fantastic.” (Interview 11)

In particular, most felt there was a lack of management understanding regarding the research aspect of the role.

“... I just think ... It’s not given the priority and it can be tricky selling ideas and reasoning with people over issues.” (Interview 02)

“But I think if it’s something new, then I think the days of just sort of getting a couple of people that are interested in and taking on this little extra thing ... management are very against that at the moment. And it’s almost something that you’re in a losing battle.” (Interview 06)

“I think from management there’s a very poor attitude to the research ... Because you know, to managers we get as many patients off the waiting list and extending working hours and doing all that.” (Interview 23)

One interviewee mentioned the income potential from the research aspect of their role and that management found this a bonus.

“It’s an expectation there as well that because money comes with it that allows, raises expectation that you will be involved in research because that brings in income.” (Interview 07)

Experiencing the Research Role of the Consultant Radiographer

Most interviewees, however, expressed that management did not view research as a cost effective aspect of the role.

“However, I think my view is very different to the management view of, you know, best value for money. But it’s difficult because they’re under pressure as well to make savings.” (Interview 09)

“Because they’re not interested in the fluffy bits. They’re interested in getting value for money, aren’t they? Per hour.” (Interview 16)

“But also it’s (research)... the only aspect of your job that isn’t going to get challenged if you haven’t done it ... I mean trust-wide, or even my sort of managers on where I’d been aren’t interested on what I am doing research-wise. But if I didn’t turn up for my list, they’d soon be on my back, wouldn’t they?” (Interview 21)

One interviewee expressed how they felt consultant radiographers had been ‘conned’ into dropping certain aspects of their role.

“... but the fact is, all we’ve done, really is just find new ways to bend the rules for them. I feel a bit of a daft puppet, really now.” (Interview 17)

Two even commented that one way the Society and College of Radiographers could help was to ‘educate’ managers about the roles and the requirements of the four core domains.

“I think probably ... like most people, I think probably, one of the biggest things that I’m not sure the Society can do anything about is the business of managerial support for this, ... in fact, I’m waiting for a call today from somebody, X, that you passed on..My opening line to her will be, “One thing, why do you want to be a consultant? What do you think a consultant is?” The other is, “Do you have managerial support? If you haven’t got managerial support, I would not advise that you should do it.” It is the most demoralizing ... ongoing demoralizing problem. It really is, you know. If you haven’t got managerial support, you may as well not bother because you will not get anywhere and if you do get somewhere, it will not be pleasant and we will have, you know ... any role has to have managerial support.” (Interview 11)

Experiencing the Research Role of the Consultant Radiographer

“I don’t know whether it’s a bigger issue of addressing managers ... and looking at how the jobs are implemented.” (Interview 22)

4.2.7.3 Other radiographers’ support to consultant radiographer

Most of the interviewees expressed how supportive other radiographers had been of the role.

“Even for the radiographers who don’t want to do this sort of thing, they are very much, you know, ‘good for you’. That’s great.” (Interview 17)

“The radiographers I work with are absolutely brilliant at backing me up and getting involved.” (Interview 20)

A few highlighted conflicts, which were difficult to resolve.

“I think there’s always the professional jealousy ... And we’ve got a lot of them, advance practitioners who specialise and are very protective of what they do and you always have to tread carefully ... And so, you know, that ... that can be tricky and people are very possessive about what they do.” (Interview 02)

Most of those who stated other radiographers were supportive of their roles did however express a lack of understanding by others of the research element.

“But it has been intimated that because I’m sitting at my desk, that ... I don’t know what they think I’m doing. I’m usually working on presentations. But sometimes they say, well, you can’t do that all day. And I thought, well, yes I can because I’ve got loads of stuff to do. I don’t think people realise.” (Interview 25)

Experiencing the Research Role of the Consultant Radiographer

4.2.7.4 Clinicians support to consultant radiographer

Several stated that clinicians they worked with were unaware of the level of their work and still treated them in a traditional hierarchical manner.

“Or as I heard one of them say once, I wouldn’t have the necessary brain power to understand.” (Interview 04)

“... and he looked to me and he said, ‘Why are you involved in research?’ Exactly like that ... so, he’s lovely. He’s really nice. And I said, ‘Because this is my role.’ And he said, ‘Gosh, you know, that’s strange.’ It’s like I was like an alien ... I honestly don’t think that they even think about involving us ... because they don’t think that we are capable, I think. I don’t think that ... I mean, in a nasty way, I don’t think they think we are capable.” (Interview 11)

“I mean, we’re only able to achieve with their (radiologists) help ... I mean, the radiologists that we work with. If they want to be a barrier to anybody’s development, they can be ... It is, and that has been our stumbling block ...” (Interview 21)

“... however they couch it, however nice they are about it, we’re the clinical stuff. We’re basically just the cheap labour. And if that’s how you treat it and you never try and make any improvement, and you never try and take anything forward and all you do is just drudge out the day to day doing the same old thing, day in, day out, then you are cheap labour.” (Interview 23)

A few described conflicts with those in medical in roles.

“... the younger ones are not totally keen on the idea because they just see us as a, you know, a threat.” (Interview 17)

One explained that relationships had to be worked at to gain mutual respect.

“But then also you have to build bridges with people, people have to learn to trust you and you’ve got to work at relationships ... But it can be challenging.” (Interview 24)

Experiencing the Research Role of the Consultant Radiographer

However, for a number of respondents it was clear they felt there were boundaries to their role.

“I think in some ways you’ve got to find sort of the right way yourself in that you’re not a radiologist. So you always have to know your limitations and sort of how to behave with them really because you’re doing the same but you’re not actually a radiologist in the end; you haven’t had a medical training, I think, so you’ve got limitations and just sort of ... you have to build up a relationship really and they have to learn to trust you.” (Interview 10)

“I think the driver for me was the autonomous aspect of work which is being able to make decisions on my own. And I think that’s really unique for radiographers because a lot of the time, in terms of clinical decision making, we don’t have enough opportunity to do that because we work directly on the radiologist and we are just about ... we are the only AHPs who do that. All the other groups work in their own clinical practice and they make decisions about how they treat patients but we don’t do that.” (Interview 16)

4.2.7.5 Rivalry (mainly with research radiographers)

One described rivalry with research radiographers, “professional jealousy”, and “possessiveness of research” meaning she had to “tread carefully.” This was a situation described in similar terms by others.

“It is really hard having people whose jobs overlap [research radiographers]. Without defined boundaries. And they’re kind of knowledge is power ... It’s not just having jobs, you know, because I’m sure if you have the right people in the right jobs, and then it could work really well ...” (Interview 13)

“Oh, I think sometimes the real barriers are when people are a wee bit primadonish and they don’t want to share.” (Interview 24)

This was saddening to hear as it would seem ideal for research success if these practitioners could work harmoniously together.

“There is a place for both ... and they should be able to work together.” (Interview 2)

4.2.8 **Research Culture**

Themes

- None
- Acceptance
- Interaction

4.2.8.1 **None**

Most described a lack of research culture in their department and that people were too fatigued by workloads, or had not been involved with research, so did not understand or appreciate its value.

“Well, it’s a non-existent in my department in my mind. Does that make sense? I want there to be one.” (Interview 04)

“I think there’s a whole mindset amongst a whole lot of people that it’s one of those that research is one of those things that you just want to do research. You know, but it’s not really that essential ... A huge mental leap that’s required.” (Interview 05)

“But I think they see a bit a of a hassle really because they’re already working really hard to get patients through keep waiting times a minimum, keep on focused targets, etcetera. And I think it’s the sheer volume of work that make them just go, “Oh, I can’t be bothered doing this.” (Interview 08)

“... if the culture isn’t really there set up for research, just trying to achieve anything can be quite difficult sometimes ... I think sort of apathy, you know...just the general lack of enthusiasm and, you know, this is not what we do. We’re just here to scan patients and see them on their way ... that attitude, you know. But if the culture is not orientated, they wouldn’t be excited about research and finding out new things.” (Interview 14)

“... I’ve never seen so many ... completely pissed off people. You know, everyone looks completely tired from the time they come in to the time they go home, you know ... I think plenty of people have a desire to be involved and that goes right across the department on all levels, but I think the reality is most people get to the end of a ... we’ve got people working twelve-hour shifts here or thirteen-hour shifts.” (Interview 17)

Experiencing the Research Role of the Consultant Radiographer

4.2.8.2 Acceptance

A few described departmental cultures that were accepting of research, but many were finding it difficult to get others involved because staff had a fear or a lack of understanding of research.

“... and a big part of it is we’re trying to build up research and promote a research culture within the department ...” (Interview 02)

“I think that’s how it was when we did the DCR. You had no autonomy at all, did you? ... There wasn’t a questioning of what you needed to know ... And that’s real change, because that sort of...it sort of almost a change in culture, isn’t it? So, you have this sort of cultural thing, you know. This is how we were always brought up. This is how, you know ... when you’re still in your formative years, I guess ... And I actually still feel that quite a lot, you know ... that I still feel the weight of my early training.” (Interview 14)

Four (16%) noted the prerequisite for a positive research culture and to support other staff.

“I think you need to have a culture. You need to develop a culture of research in their department.” (Interview 02)

“You need people who are committed, who are dedicated, who are really interested. And you can drive things forward.” (Interview 05)

“I think one of the things I learned is actually you can’t just; you know ... you can’t just say, “Well, we want to have a research culture.” (Laughter). You have to be very ... very gradual really.” (Interview 14)

Three (12%) of those who had developed proactive research cultures felt the driver should be the consultant radiographer.

“I think communication and information, I suppose, is the key to everything.” (Interview 15)

Experiencing the Research Role of the Consultant Radiographer

“Well, I guess it’s the whole ethos really here, that it is an accepted practice really to be undertaking research. So, I would almost go the other way actually and I would feel that if I haven’t got a few things, a few research balls in the air really, you know, people would be wondering ‘why not?’ (Laughter).” (Interview 18)

“I suppose if you’ve got people who are enthusiastic with you. But basically, I think it has to come from me rather than...or somebody else says, I’ll be going to look at something, I’m happy to get involved. I think, you have to self drive to a degree because no one’s going to force you to do it.” (Interview 25)

4.2.8.3 **Interaction**

Those who described more interactive research cultures emphasised how crucial it was to include others, to encourage and to support.

“ ... One of my passions is to instil audit and research into radiographers within our unit and to generate that culture. As I’m looking at audit and starting off with audit and then moving onto research and developing that culture, really. I’m quite passionate about that.” (Interview 01)

“... we’re hoping to get more of them [radiographers] involved [in research]. And I came to think so that when they get into specialist roles they’re already used to doing that kind of thing [presenting]. Because it is a bit daunting when you’ve not done it at first [presenting] because you go in and you think, these doctors are just going to think, I don’t know what I’m talking about.” (Interview 24)

“And so, yes, I’ve always been keen to take part in anything like that [research] because I think it’s very important to move forward because we’ll never get anywhere if we don’t. So, yeah. But it’s not been easy trying to find the time and trying to fire people up with enthusiasm really.” (Interview 25)

4.2.9 **Professional Issues**

Themes

- Succession Planning
- Pushing boundaries
- Traditional influences

Experiencing the Research Role of the Consultant Radiographer

4.2.9.1 **Succession planning**

Five (20%) expressed a desire to pass on their skills and knowledge to the next generation of radiographers.

“I mean I think you got to be right to sort of cascade and disseminate that to the team. Because it can inspire others, or it should inspire other people. You know, to think you could do something like that as well. Because that’s how it works with me sometimes. You look at somebody and think, there shouldn’t be any reason why I couldn’t do that.” (Interview 05)

You know, I am creating a legacy.” (Interview 07)

“... see myself actually as probably a bit of almost just sort of transitional person, really. I mean, you know...when I get succeeded, I would hope if I’ve done nothing else but just to sort of clarify the role and, you know, build the foundations for it ...” (Interview 14)

“We’ve got a breadth of knowledge that you need to pass to other people ... It’s not just about the patients. It’s about the patients of the future. And the only way you’ll help the patients of the future is by doing research, by implementing new technologies and you know, by making sure you’re educating those that come through.” (Interview 24)

However, there was a lack of succession planning in place and most felt if they were to leave their post the vacancy would not be filled, leaving a gap in the service.

“I think, we got these roles around about a person and they shouldn’t be. It should be a service need of some kind. There should be a need and people sell it, but at the moment, it’s just being ... they’re having to be built around personalities and unfortunately, the way things have gone, there aren’t always those people coming through ... We seemed to be going backwards a little bit, certainly in my field around extended roles which doesn’t help with succession.” (Interview 11)

“And so in terms of succession planning for me and my role, the answer is, I would say no. But it is something that we, as a department, need to address because I’m fully aware, you know, that if I was to have some terrible accident or wasn’t able to come to work for a period of time and it would leave a huge hole in the department because there are aspects of the service which I run solely on my own ...” (Interview 16)

Experiencing the Research Role of the Consultant Radiographer

One interviewee had experienced a secondment type role which she felt had developed her skill set and, therefore, was an invaluable model to support succession planning.

“Basically, when I went into the secondment I was already classed as a clinical expert in terms of reports and ... but it’s all the other aspects of the job that had not developed or expanded. So, by using the secondment it has allowed me to continue doing the clinical work but also to look at the other elements.” (Interview 08)

4.2.9.2 Pushing Boundaries

A few described a lack of desire by the profession as a whole to ‘push the boundaries’ of practice.

“I just don’t want them to look at me as another radiologist because I’m not that and do not want to be that ... And I also don’t want to be a manager. So I want them to look at me in the different way, really, which I think they do now.” (Interview 01)

“... my job description would match more the Society’s view of it and that’s the kind of what I hoped that I was getting myself in for because I know I’m getting one of it but I’m only 40, I’ve got another 20 years to work. I don’t want to just, over the next 20 years, just be doing clinical because, you know, I’ll get bored and you know, I’d like to do some research that affects clinical practice and you know, see some changes and improvement, because otherwise, why would you want to do the job? Because otherwise, you’re just there and I don’t know what the word is really. Just a workhorse really, turning out with the numbers ...” (Interview 09)

Many described a desire to be the professional lead.

“So I would like it to develop where I can be an authority on lots of things in the department and be the person that can be pushing things or driving things forward.” (Interview 02)

Experiencing the Research Role of the Consultant Radiographer

"I know, and I think to feel fulfilled, to feel that I've done my very best in my job. And I would like to do, I would like to kind of lead, I think. I would like to feel confident enough to lead on some not clinical based research in terms of actual patients ... And I'd like to feel that I would lead on that and able to do some good bits of research, lead the team and show that it's possible really ... That you know, I think that would give me utmost satisfaction in terms of having been a radiographer ... And I think that would give me a huge feeling of professional fulfilment and huge confidence booster." (Interview 05)

"I'd rather be a bit of a mover and a shaker really." (Interview 23)

A lack of consistency in the roles was described as potential for stifling role development and for causing consistency and compatibility issues.

"I have a bit of problem with the name again because a lot of consultants ... I do not know if they are now, but a lot of the people I know who have been consultants are not really consultants in true sense of the word. And so, I think if it was a true consultant post, then yes, I think it should be. I think there should be clinical specialists and there should be consultants and they should be different ... And I suppose we as individuals or ... have gone along with that so that we can get the role, and I think that is wrong." (Interview 11)

To this end a few felt accreditation would be helpful.

"The ... accreditation for the consultants is brilliant ... it gives substance to the title and it's transferable then if everybody's assessed in the same way, you know that it's one department's consultant is similar ... not necessarily the same but similar ... of a similar standard, really to another department ... For whatever...varied reasons it has been made quite difficult for the consultant post to be implemented properly ... I don't know who said it, there was a quote somewhere that said, 'It's relatively easy to demonstrate consultant practice; but it's quite hard to maintain consultant practice' ... So they can see you're accredited at the standard and this is what I do." (Interview 15)

Although others felt individual services should be supported, and therefore variations in roles were acceptable.

Experiencing the Research Role of the Consultant Radiographer

“... And in the end it’s dictated by what the Trust wants, isn’t it, rather than what the individual wants, whereas some people have been instantly promoted to that post, haven’t they, I mean some have applied for a job nationally and got the post. And some have been ex-managers who’ve recreated their role into a consultant radiographer. It’s a big mix, but then at the same time I think why can’t it be like that as well, though? Why can’t you have a mix of people who still are consultant radiographers? ...” (Interview 21)

Three (12%) discussed a need for their roles to be more strategic.

“Yes. Well certainly the aspects of my role, I think, which makes it different for me is that I ... you see the contribution I make to the strategic development of the department ... But in terms of the whole of radiology, then that is part of my role and I work with the service leads to develop the whole service so that tapping into my high-end kind of strategic thinking skills as well as my clinical skills. That’s what happens to a radiologist, isn’t it? They don’t just look at the little bit but they do. They look at the whole thing. And so, you know, that’s ... no, that’s the really interesting part of what I do. Good quality and governance and it’s great.” (Interview 16)

“I think I suppose to be known as an expert in your field, not just locally but nationally as well, because you get more opportunities then, doing it at that level.” (Interview 21)

“I would hope that anyone within the sort of role where you’re pushing boundaries and leading things forward has an astuteness that I don’t know if that would make have an inquiring mind and I think to have that inquiring mind that you’ve got to have a degree of understanding of research and the importance of critique in the research that’s out there because otherwise you’re, you know, someone’s not going to be telling you how to deliver your service or how better to deliver your service.” (Interview 22)

Difficulties in parity of roles were discussed. One even commented that the low number of consultant radiographers in-post made it hard to influence change.

“And I think part of that is just for us as radiographers its numbers. You know, it’s very difficult to, I think to have such a strong voice.” (Interview 22)

Two felt a solution would be to do more collaborative work as a group of consultant radiographers.

Experiencing the Research Role of the Consultant Radiographer

“I think, perhaps, we could do within the consultant group is identifying areas that we think need researching; and perhaps, getting a collaborative between several consultants from different Trusts ... So I think a bit more collaboration between centres.” (Interview 15)

“Unless we have some sort of national help, sort of research, not department research but somebody out there that we could just sort of say, ‘Alright, I’ve collected all this information but I have absolutely no idea what to do with it.’ Is there anybody out there that can help with that?” (Interview 20)

A minority felt positively towards changes in professional work and that their roles could be developed more.

“So, yeah, I think a whole culture of health professional work is changing and is getting to be more acceptable, isn’t it?” (Interview 12)

Whilst others considered the ideal of their roles and the reality were often different and this made it difficult to fulfil the four core domains.

“I don’t think there is a clear solution other than the fact that we need to really get the top down appreciation of what research and things like that would do, the benefits it would bring because I don’t think there is appreciation of it right now.” (Interview 17)

“... with the NHS at the minute the pressure is on everybody and is on the top of a lean and mean service. We can’t invent time for the Trust - you can keep lobbying them. It’s a really important part of our work and it needs to be given priority, you know, equal priority but I’m afraid at the minute it’s not going to happen.” (Interview 20)

One commented that changes must come from the consultant radiographer themselves and demonstration of the value of their roles was needed.

Experiencing the Research Role of the Consultant Radiographer

“... consultant radiographers are very good at telling people how fabulous they are. And I’m a bit sick of it and I wouldn’t be in the least bit surprised if there were a lot of other people who didn’t feel the same way. To me, it’s about putting your money where your mouth is and showing that you’re that good or demonstrating what a difference you’re making, where you’re taking the service, where you’re taking the profession. Not just keep telling everybody how fab you think you are.” (Interview 23)

4.2.9.3 **Traditional influences**

The traditional role of radiographers as being “subservient” and being “relegated to the role of button pusher” was often raised as an issue.

“It’s quite often radiographers I find, having been the radiographer (Laughter) are quite subservient, I think, and they don’t push themselves forward enough. I think that’s the big problem ... And in a lot of cases, we are our own worst enemy ...” (Interview 01)

“You know, for most radiographers they’re the junior partner. If actually the word partner can even exist in the same sentence as radiologist and radiographer ... And radiographers do work very much more in isolation no matter how we much say it’s a team. They very much see career progression and personal progression as an individual and don’t work collaboratively as much. It’s not in the ethos really in diagnostic ... often the radiographer is very much relegated to the button pusher role.” (Interview 07)

The requirement for all to accept AHPs undertaking and leading research was noted.

“And we’ve got a non-medical research group in the Trust which I attend and with the professor of nursing we’re trying to drive that forward. So we are trying. And I think, you know there are hopes that nurses and the AHPs will be seen more seriously in the research role or, you know, is part of everybody’s role and regardless of your grade, you know, we should all be looking at developing things and evidence-based and all that stuff.” (Interview 03)

However, it was recognised that this would not be a “quick fix” and would take time.

Experiencing the Research Role of the Consultant Radiographer

“Well, I think it’s a nationwide issue. It’s almost like moving a heavy cart slowly. Once the momentum’s going, it will be fine. I think that although we all know the consultant radiographers do “research” in practice, a lot of us a little bit stuck with it as I am from a, not from a not wanting to do it, but from clinical pressures....Problem. If it became the norm to have a protected session, and we should have a protected session. But in theory, I don’t think we do. Then, and if there’s a mass body of radiographers, consultant radiographers that become good at research and inspire others to do it ...” (Interview 04)

“So, that’s the thing that people forget. It’s actually not a quick fix overnight. That actually, it does come with a long trajectory.” (Interview 07)

Four (16%) reflected how different the professional growth of radiography has been compared to other AHP professions, and that radiographers should be more proactive and take on leadership challenges.

“We’re sitting at the back, no? The physios are sitting at the front ... and it is very difficult to change it.” (Interview 11)

“... there’s a lot of politics there, isn’t there, with the other professions and sort of making sure that you’re ... you’re positioned in a place to make your voice heard. And certainly, you know, I think as radiographers, not necessarily from the SCoR, but just on the ground, you know, I think as radiographers, we’re not always making sure that we’re on the sort of committees and things that actually help to dictate policy, you know. We ... I think we’re quite reckless in that we let things happen to us, almost.” (Interview 14)

“... everything’s protocolised and set in stone. And you report to somebody else. Occupational therapists and physiotherapists have always had autonomous clinics really doing work. And we’ve never had that till now.” (Interview 24)

“And when in the old days, you didn’t question because you were just the radiographer. Who are you to question a doctor? But if people learn to question doctors, it might make also them more keen to do research because we keep asking them questions. They’re going to have to be able to provide the answers ... But we’re not just yes men.” (Interview 25)

Experiencing the Research Role of the Consultant Radiographer

4.2.10 **Fears and Feelings**

A variety of attitudes and feelings came across at the interviews. The main ones became themes.

Themes

- Making excuses
- Defensive
- Apologetic
- Concerned
- Feelings of inadequacy
- Isolated

4.2.10.1 **Making excuses**

A few of those interviewed seemed to be 'making excuses' to themselves as to why they were not undertaking the research element of their role.

"It is and also just having that willingness. Just stand up and admit where you best fit. You know, one of the things I learned early on was that I felt I should be superwoman you know, from day one. And people, I thought, people expected that. You're a consultant now so, you've got to be as good at the job. You've got to be this and that and the next thing. And I would almost be frightened to admit certain things I didn't know or couldn't do. It takes focus on what, you know. How can you call yourself a consultant? You know the stupid things I would put myself through ..." (Interview 05)

4.2.10.2 **Defensive**

Four (16%) were almost defensive as to why they were not undertaking research.

"I have to fight very hard for everything." (Interview 01)

"So, I've had to fight my corner. I've had to justify why, why you're doing Master's? Why you do this? Why I want to go to that conference? I've had to justify over a number of years. So, you get very used to having your side of the argument ready before you're even asked about it." (Interview 07)

Experiencing the Research Role of the Consultant Radiographer

“Well, if they had been put into that role and that they’re given time and encouragement to do their different domains, it’s totally different, isn’t it to where I’ve come from? (Interview 19)

“We have to fight, well, we have to fight for it [research time].” (Interview 23)

4.2.10.3 Apologetic

A few came across as ‘apologetic’ that they were not doing research.

“I’m kind of reluctant in a way and I feel it to be a bit of a failing. I feel ... I think I’ll kind of look back and think, ‘Well, I missed an opportunity there’. Maybe I’ll do one in the future. I don’t know. Maybe I’m too old now.” (Interview 16)

4.2.10.4 Concerned

Others expressed concern for the future of their role as they were not undertaking research. One commented:

“And my underlying horror or panic is that somebody will come along and say, oh, I don’t know if you’re working to your job description. I think we’ll try and change your grade.” (Interview 04)

A few were concerned that if they did do research that they would “do it all wrong”.

“I do want to do it [research]. I just don’t know how to do it properly ... I do want to do it properly. I don’t want to do a piece of work if I think I’d do it all wrong.” (Interview 21)

Experiencing the Research Role of the Consultant Radiographer

4.2.10.5 **Feelings of inadequacy**

Many felt they needed more skills, particularly in research, to be more confident in their role.

“I’d like to think I’m kind of a professional ... But equally I don’t think what I find quite nervous because I’ve only been in the job a couple of years, I think people have this idea that you’re an expert in absolutely everything, and there’s definitely gaps in my knowledge.” (Interview 06)

“Yeah, I think the risk case is that people are going to feel like they sort of failed for not fulfilling their role but actually, what are they being asked to do is impossible.” (Interview 09)

“Because I felt obliged to go on it [research study day]. But I didn’t say anything because I didn’t know anything about research so I kept my mouth firmly shut that day ... But sometimes I think ... well, I haven’t got a Master’s. Other people have got their Master’s. Have I slipped in here under the radar ...” (Interview 19)

“I’m not saying I couldn’t do it [research lead] but I would find it quite intimidating, quite daunting. And I would find it, you know, I would probably find it quite challenging.” (Interview 23)

4.2.10.6 **Isolated**

Nearly every interviewee expressed the words ‘lonely’ or ‘isolated’ in their interview.

“I’ll be interested actually to see if everybody is having the same experience (Laughter) that I am because we are very isolated.” (Interview 09)

“It’s too hard, you know. I don’t think I’m...I don’t think I’m particularly, you know, a weak person, but I just find it too hard and, you know, I wouldn’t encourage it ... Lonely roles.” (Interview 11)

“You’re suddenly this isolated and responsible person ... Well, I think we’re all very isolated in our roles.” (Interview 13)

“I think that’s one of the big things about research, it is quite a lonely occupation.” (Interview 15)

Experiencing the Research Role of the Consultant Radiographer

“It’s basically been about me settling down although I’ve been here for quite a long time. Certainly I am now on my own. Whereas before I could more freely ask advice. I can still ask advice. We work like a team. But obviously now, I don’t want to be asking very often so it’s my own decision all the time and feeling happy about myself in what I’m doing before I can go and impose myself ...” (Interview 19)

“Very isolated. Very isolated.” (Interview 24)

4.3 RELATIONSHIPS ACROSS THE THEORETICAL CATEGORIES

Table 20 summarises the ten theoretical categories and the thirty four themes within these and how these are interdependent on each other. For example, a ‘lack of confidence to undertake research’ is linked to ‘an understanding of research’ and this is interdependent on ‘qualifications and research training’, which will affect ‘research activity’.

Figure 8 is a ‘mind map’ visually showing all the connections and relationships across categories. Human interaction with situations is complex and hence one theme is no more significant than another. It is the interdependency across all of the themes that affect the ability to undertake the research core domain for individual consultant radiographers.

Experiencing the Research Role of the Consultant Radiographer

Table 20: The Interaction of the Ten Theoretical Categories

THEORETICAL CATEGORY	THEMES	MENTAL CONNECTIONS: INTERACTIONS
THE ROLE	<ul style="list-style-type: none"> • Research as a core domain • Leadership, control and autonomy • The clinical role 	<ul style="list-style-type: none"> • Fears and Feelings • Support • Lack of Time • Research Culture
QUALIFICATIONS AND TRAINING	<ul style="list-style-type: none"> • Research capability • Lack of confidence to do research 	<ul style="list-style-type: none"> • An Understanding of Research • Fears and Feelings • Research Activity
AN UNDERSTANDING OF RESEARCH	<ul style="list-style-type: none"> • What is clinical research? • What actually counts as research? • How does research affect practice? 	<ul style="list-style-type: none"> • Research Culture • Research Activity • Qualifications and Research Training
RESEARCH ACTIVITY	<ul style="list-style-type: none"> • Publication record • Research user • Feedback to practice 	<ul style="list-style-type: none"> • An Understanding of Research • Research Collaboration • Research Culture
LACK OF TIME	<ul style="list-style-type: none"> • Real lack of time • Perceived lack of time • Job plan 	<ul style="list-style-type: none"> • Role • Fears and Feelings • Support
RESEARCH COLLABORATION	<ul style="list-style-type: none"> • HEIs <ul style="list-style-type: none"> ○ Research link ○ Teaching only • Other AHPs/professions • Research radiographers 	<ul style="list-style-type: none"> • Research Culture • Research Activity
SUPPORT	<ul style="list-style-type: none"> • Consultant radiographer providing support to others • Managerial support to consultant radiographer • Other radiographers support to consultant radiographer • Clinicians support to consultant radiographer • Rivalry 	<ul style="list-style-type: none"> • Role • Professional Issues • Research Culture
RESEARCH CULTURE	<ul style="list-style-type: none"> • None • Acceptance • Interaction 	<ul style="list-style-type: none"> • An Understanding of Research • Research Collaboration • Qualifications and Research Training
PROFESSIONAL ISSUES	<ul style="list-style-type: none"> • Succession planning • Pushing boundaries • Traditional influences 	<ul style="list-style-type: none"> • Support • Role • Research culture
FEARS AND FEELINGS	<ul style="list-style-type: none"> • Making excuses • Defensive • Apologetic • Concerned • Feelings of inadequacies • Isolated 	<ul style="list-style-type: none"> • Role • Qualifications and Research Training • Support • Professional Issues • Lack of Time

THE TEN THEORETICAL CATEGORIES

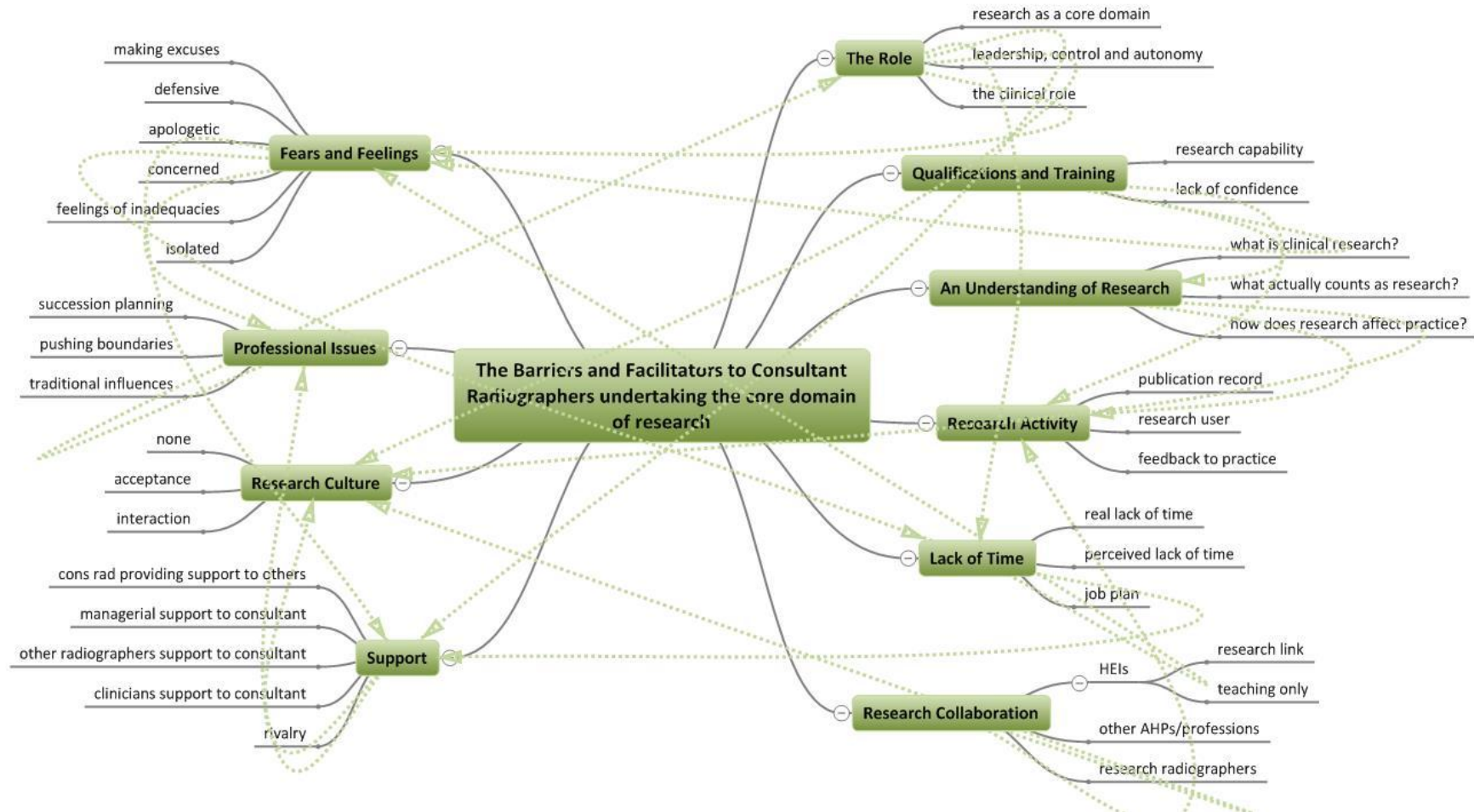


Figure 8: The Relationship of the Ten Theoretical Categories: showing the interaction across them

Experiencing the Research Role of the Consultant Radiographer

4.4 **CORE CATEGORIES**

The ten Theoretical Categories could then be collapsed into three Core Categories, as seen in *Figure 9*, although collapsing the data to this level loses much of the detail.

- **Capacity**
 - The Role
 - Lack of Time

- **Capability**
 - Qualifications and Research Training
 - An Understanding of Research
 - Research Activity
 - Fears and Feelings

- **Organisational Structure**
 - Research Collaboration
 - Support
 - Research Culture
 - Professional Issues

Experiencing the Research Role of the Consultant Radiographer

CORE CATEGORIES

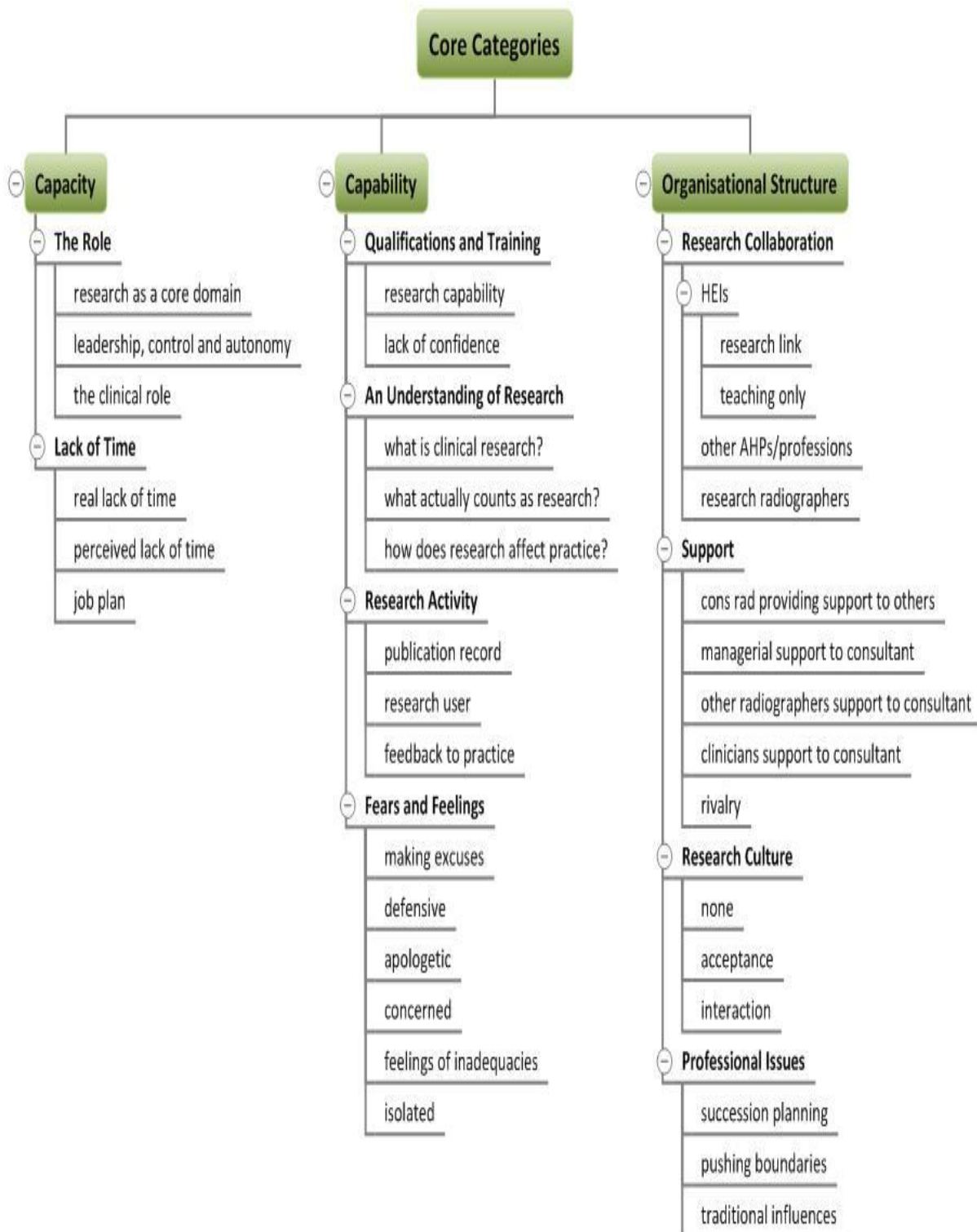


Figure 9: The Core Categories: showing the network of the theoretical categories

Experiencing the Research Role of the Consultant Radiographer

4.5 **BARRIERS AND FACILITATORS**

It seems more useful, in terms of understanding how research activity for consultant radiographers may be increased in the future, to consider the themes as barriers and potential facilitators:

- **Barriers** - what blocks research from happening, or hinders its progress?; as seen in *Figure 10*, or;
- **Potential facilitators** - what can motivate individuals and enable research to occur?; as seen in *Figure 11*.

What is important to note is that the barriers and facilitators are also intrinsically linked, for example, research training (a facilitator) would improve a lack of understanding of research (a barrier).

BARRIERS

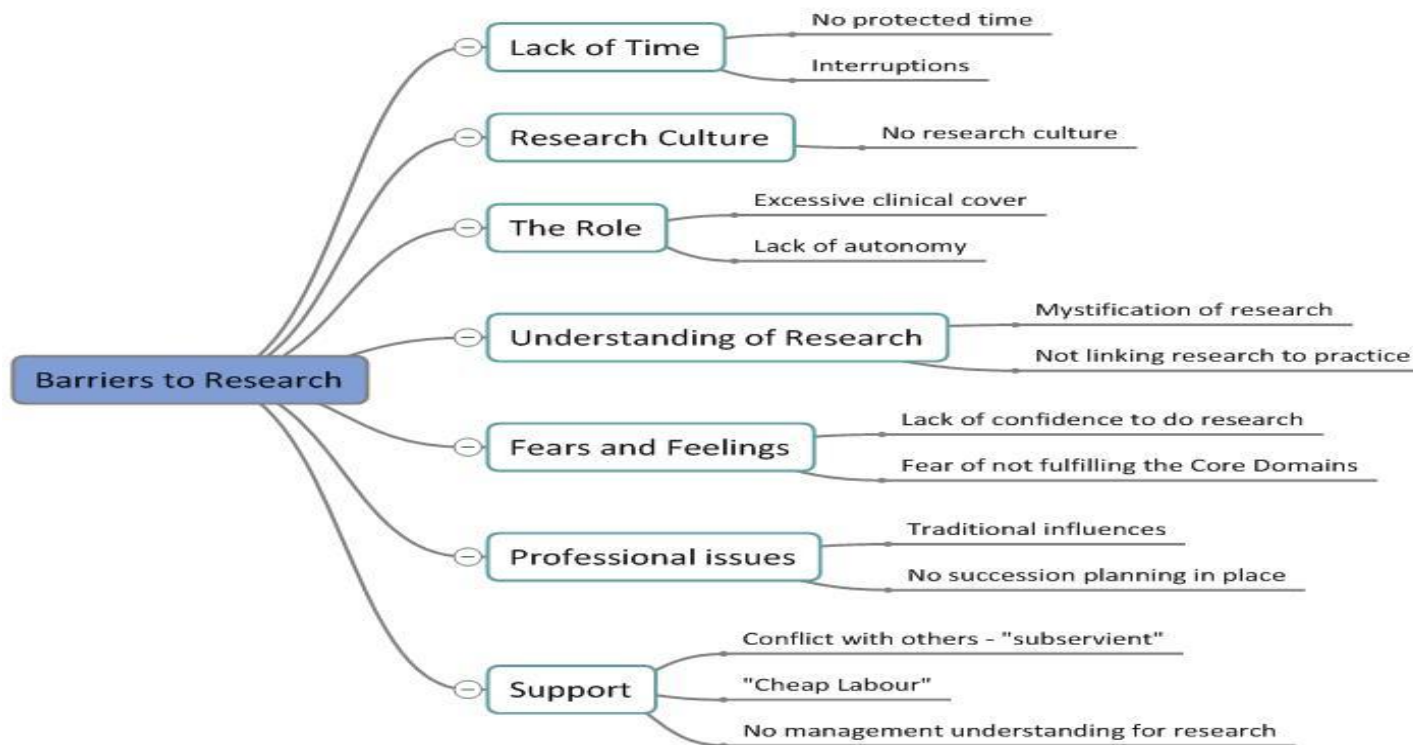


Figure 10: The Potential Barriers to the Research Core Domain: showing the network of barriers which can block research from happening

Experiencing the Research Role of the Consultant Radiographer

FACILITATORS

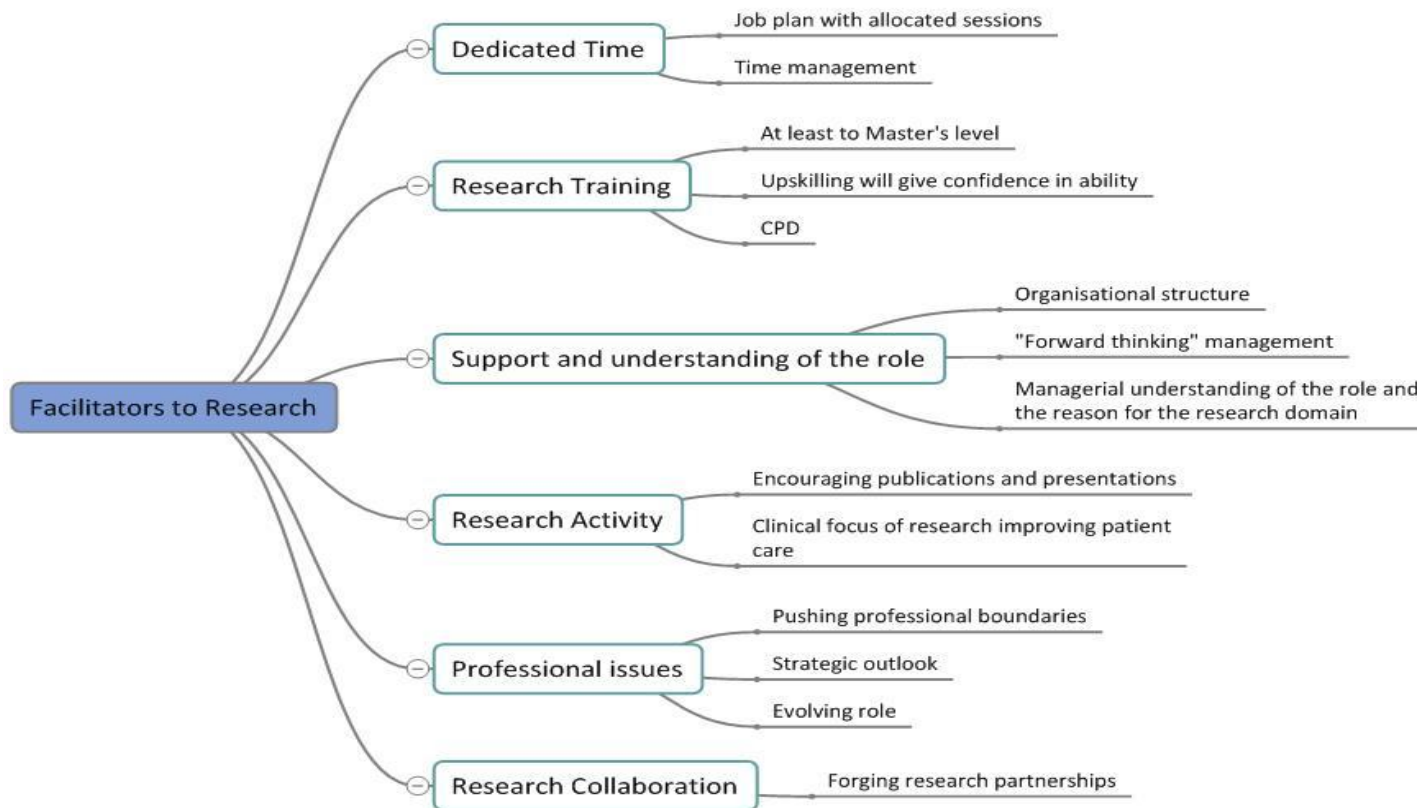


Figure 11: The Potential Facilitators to the Research Core Domain: showing the network of factors which can motivate and enable research to happen

Experiencing the Research Role of the Consultant Radiographer

4.6 **SUMMARY OF CHAPTER**

This chapter has reported the main interview findings.

The interview data were collapsed into ten theoretical categories and then three core ones.

The findings indicate there were barriers, blocking research from happening, and potential facilitators, which could aid consultant radiographers in their roles.

The main barriers were:

- Lack of time;
- Lack of research culture;
- Excessive clinical role;
- A lack of understanding of what research means;
- Lack of “support”;
- Traditional professional boundaries;
- Lack of confidence to undertake research.

The potential facilitators were:

- Dedicated research time;
- Research training and up-skilling in research;
- Managerial understanding of the research domain of the role;
- Collaboration with Higher Education Institutions (HEIs);
- Removing hierarchical professional boundaries;
- Research focussed on clinical demand.

Experiencing the Research Role of the Consultant Radiographer

A summary of the main group characteristics from the interviews can be seen in *Table 21*. This shows difference across the modalities in their responses to Master's level qualification, allocated research time, and research as a core domain. There was diversity of opinion as to whether research should or should not be a core domain, but this was not as strong as indicated at the questionnaire stage.

Table 21: Interview Summary of Interview Group Characteristics

n=25	Have a Master's degree 'yes'	Allocated research time 'yes'	Research should be a core domain 'yes'
Breast Imaging n=11	8 (72%)	5 (45%)	7 (63%)
Ultrasound n=3	3 100%	2 (66%)	3 (100%)
Radiotherapy Oncology n=6	6 (100%)	4 (66%)	6 (100%)
Others n=5	5 (100%)	2 (40%)	4 (80%)

(BI = breast imaging; US = ultrasound; RO = radiotherapy and oncology)

The next chapter will discuss the implications of the results, from both the questionnaire and interview stages, and proposes a conceptual framework for the facilitation of the research core domain in the future.

CHAPTER 5

MAIN DISCUSSION

5.1 INTRODUCTION TO CHAPTER

This chapter discusses the main integrated results from the questionnaire and interviews.

The grounded theory approach meant that initial outcomes from the questionnaire provided the baseline information for the investigation; this was then explored further by the individual interviews and these outcomes supported and modified the initial questionnaire findings. Finally, the literature was examined in detail and that aided in consolidating the final outcomes

The aim of this study was to explore what the core domain of research means to consultant radiographers in clinical practice and to identify the key factors that facilitate or hinder research activity by this staff group. Several new and unexpected results were revealed in key areas.

This discussion chapter reflects on an emerging conceptual framework of the barriers and facilitators to consultant radiographers undertaking research, and highlights the potentially required outcomes which would aid the development of the consultant radiographer post.

5.2 **LIMITATIONS AND STRENGTHS OF THE STUDY**

5.2.1 **Limitations**

There are certain limitations to the work that should be recognised and which may have affected the results drawn from the questionnaire and the interviews.

1. It could not be established as to whether each question in the questionnaire was fully understood, as there was no 'face-to-face' follow up. This might account, at least in part, for any disparity in the results.
2. It is unknown if all the questionnaire responses were answered honestly, or if respondents simply gave the 'politically correct' answer. It is significant that there were non responders to several questions.
3. Some questions (*see Appendix 2: Questionnaire*) yielded flaws in the main group of respondents that were not detected at the pilot stage:

Question 6: It might have been better to have asked for the highest qualification gained, rather than all qualifications. This could have enhanced the clarity of the analysis.

Question 7: this was a multiple question and 'research planning and writing a proposal' should have been further divided into separate questions as some respondents may have been involved in one but not both of these activities.

Question 14: 'Unspecified' might not have been a clear definition and may have been interpreted differently by respondents. For example, this option might have been interpreted as 'none'.

Experiencing the Research Role of the Consultant Radiographer

Question 18: 'A main part of my role should be the core domain of research', may have been misconstrued by a few respondents as *'the main part of my role'* and may have skewed responses. This is also a leading question and should have been rephrased thus: *'What do you feel are the main parts of your role'*, which would have been more in line with the grounded theory approach.

Question 48: 'What do you feel is the impact to the profession of doing research?' might not have been a clear definition and may have been interpreted differently by respondents. For example, this option might have been interpreted by some respondents as *'me doing research'* and by others as *'anyone doing research'*.

Questions 19, 20 and 21: A 'don't know' option was not required on the questionnaire and may have caused confusion. One respondent ticked 'don't know' for question 19 'Have you ever published the results of a research project?' and question 20 'Have you presented any research findings in the last 6 months?' and yet it is doubtful that this individual was actually unaware if they had published or presented.

4. The coding of initial interview transcripts, production of themes, and core categories is largely subjective.
5. All the interviewees knew the interviewer and might, therefore, have felt they needed to say what they thought the latter wanted to hear rather than be frank and open in their responses.
6. The researcher is biased towards the demands of research for the profession and this may have transgressed into discussions during the interviews.

Experiencing the Research Role of the Consultant Radiographer

7. Those with a more active interest in research might have largely comprised the volunteer group for interviews, and might therefore have positively skewed the sample responses.
8. Throughout all the interviews the nature of what was being discussed was quite clear at the time, but a small number of conversations did not transcribe as well as others, resulting in 'uncodable' segments of text, a situation also described by Burnard (1991).
9. In terms of external validity the findings support those from similar work i.e. Woodward et al (2005 and 2006). However, it is possible that all those willing to be interviewed might have been the ones who expressed strong views, whether they be negative or positive, as described by Drennan and Goodman (2011).

5.2.2 Strengths

Slevin and Sines (2000) noted that an important aspect of qualitative analysis is the establishment of 'truth value'. The questionnaire and interview findings do correlate and so support the claim of validity for the study.

1. All members on the Society and College of Radiographers database who were recognised as a consultant radiographer as of December 2011 were invited to participate in the questionnaire. The full population at the time (n=61) was approached and fifty responded within the allocated timeframe, which equated to an 82% response rate.

Experiencing the Research Role of the Consultant Radiographer

2. All disciplines of radiography in which consultant radiographer posts exist were represented in the questionnaire population.
3. The interview participants were gathered from the numbers in the consultant radiographer group as of May 2012. All had the option to be interviewed within the allocated time frame. Twenty five (41%) were interviewed.
4. There was only one interviewer; therefore, all interviews were consistent in terms of style.

5.3 **DISCUSSION OF MAIN RESULTS**

5.3.1 **Does the length of time in post affect the level of research activity?**

Length of time in-post may affect the amount of research undertaken in the role; as those who had been in-post for a longer time, i.e. five years or more, appeared to be those who were more likely to undertake the research core domain. Moreover, it could be argued that those in-post for longer might have more confidence in their role, experience, and have developed collaborations with others.

Additionally, has expectation of the role changed in the last two years? Those in post for more than five years would have been Strategic Health Authority (SHA) approved positions, and at that time the four core domains would have to appear in Job Descriptions (JDs) for approval of the position to be offered. There has been an increase in consultant radiographer numbers during the last two years, but mainly in the disciplines of breast imaging and ultrasound (32% and 33% respectively). Those in radiotherapy and oncology tend to have been in-post for longer, i.e. over five years

Experiencing the Research Role of the Consultant Radiographer

(38%). This might be a reason for the larger numbers recorded in radiotherapy and oncology of those with a Master's level qualification, undertaking publication and presentation, and integrating the four core domains.

5.3.2 Is the clinical aspect of the role overwhelming the other domains?

The 'Advance Letter' (DH, 2001) indicated that 'expert clinical practice' requires a minimum of 50% clinical focus, but for many of the interviewees the proportion of clinical work appeared to be 90-100% with no allocated time for the other aspects of the role. The main barrier to research cited at interview was the clinical workload.

Many had no allocated time for the research core domain and several were clearly "struggling" with their clinical workloads, for example:

"... if you read my job description, which is a very in-depth job description, it's got all these elements in it that I struggled to meet because of my clinical workload." (Interview 09)

In particular, those in breast imaging recorded lower time allocations for research, with 66% stating 'no' or 'unspecified' time for this discipline. So it would appear even for those who had research in their job descriptions, and perhaps with an expectation that this would be undertaken, in practice the clinical workload was too high for it to be factored in. However, a few stated that 'research' was in their job description to get the post 'banded' as an 8, but there was no expectation that this would occur.

Experiencing the Research Role of the Consultant Radiographer

Conversely, those in radiotherapy and oncology often had designated time for research, with half a day recorded as the most common response (50%), and one in this group had two days a week, which was the highest overall allocation.

Those who stated they had autonomy and control over their working week appeared more able to fulfil the four domains.

Certainly, lack of time and heavy clinical commitments are the biggest barriers to research, as noted by The College of Radiographers 'Scope of Practice' Report (CoR, 2008), which stated:

“One issue which appears to be particularly vexatious is a question of individual caseload ... In spite of research being one of the elements of the consultant role, some consultants reported being prevented by pressure of work from undertaking research.”

College of Radiographers (2008), pages 42-43

However, it is important to consider that five (20%) of those interviewed, and a larger proportion of those who responded to the questionnaire, believed their clinical role had priority and were adamant that this was the *raison d'être* for their post. Moreover, some did not see the relevance of the research component, or even wanted it, for example:

“Not really, I mean, is the research part that important to the role? I don't think it is for some people's role, you know.” (Interview 10)

It is clear that role development of posts and the types of posts is variable. Four out of the five interviewees, who did not see the relevance of research, were in breast

Experiencing the Research Role of the Consultant Radiographer

imaging roles. This area of practice has had the greatest growth in role numbers over the last two years; probably in part owing to workload pressures, such as increasing the age range of those invited for breast screening and the change in practice to take two projections at every screening attendance rather than only on first attendance.

Perhaps variability in roles is to be expected, and indeed even accepted, owing to the diversity of practice across the discipline of radiography. However, for radiography to achieve recognised research activity parity with other AHP professions then the core domain of research must surely remain central to the ethos of the role, as determined and currently unchanged by the Department of Health (DH, 2000b; DH, 2001).

5.3.3 **Does the level of qualification affect involvement in research?**

Numerous government and professional papers (Scottish Government, 2010, 2012; Skills for Health, 2011; College of Radiographers, 2013) have stressed the foundation for learning at Master's level as a minimum. There has been much debate within the profession over the last few years as to level of qualification expected of a consultant radiographer, and it has been argued (Manning & Bentley, 2003) that all should be aspiring towards Doctoral level.

At the time of data collection there were no consultant radiographers in practice with a Doctoral level qualification; although two commented they were working towards this qualification. Nearly 80% of questionnaire respondents reported having a

Experiencing the Research Role of the Consultant Radiographer

Master's level qualification; which is encouraging in terms of training and advancing the professional level and expectations for the attainment of research skills.

Within the breast imaging group 86% were Diploma of The College Radiographers (DCR) trained and the remainder held a Bachelor of Science with Honours (BSc Hons) in Radiography. Within this speciality 68% were also recording post graduate certificates and diplomas, and a few expressed issues with accumulating enough credit points per module across various universities. The modular Master's degree was discussed by those in breast imaging during the interview stage and considered as difficult, for example:

“The clinical need overrides the research need a lot of the time. It's takes you a long time to get to actually finish the new dissertation simply because your having to do the clinical modules and your having to traipse all around the country to get the clinical modules. So actually getting to the end of the dissertation is like climbing a mountain at times.” (Interview 20)

This requires further investigation; as for clinical staff, modular options may be the most viable.

Interestingly, those with postgraduate level qualifications are unlikely to be building significantly on the professional body of knowledge, as 75% of those with a Master's degree had not published material in the last twelve months. Of concern was that only 55% of those with a Master's degree felt the research in which they had been involved was to improve patient care. Therefore, the link between an evidence base and practice appeared to be confused.

Experiencing the Research Role of the Consultant Radiographer

During the interviews most of those who held a Master's degree stated they felt it had improved their research skills and cited it as crucial if they were to support other staff effectively. In fact, twenty two of the interviewees (88%) felt consultant radiographers should be educated to at least Master's level and that the absence of this level of qualification was "watering down" the role, as reflected by:

"... I mean, I don't think that somebody should be made a consultant radiographer unless they have the MSc because I think that that learning is so crucial really and particularly ... because research is supposed to be one of the arms of a consultant post ..." (Interview 18)

A key focus from Nightingale and Hardy's (2012) exploration of trainee consultant roles supported higher academic qualifications. Half the number of trainees in their assessment had yet to complete a Master's degree, which respondents said incurred considerable extra time and pressure. As such, all the trainees considered that a Master's degree should be attained before undertaking a trainee or substantive consultant post, as summed up by the study recommendations:

"An MSc qualification should be a prerequisite for entering consultant practice training and not an aspect of the training itself."

Nightingale and Hardy (2012), page 30

The level of academic qualification attained appears to be a predictor for uptake and involvement with evidence-based practice. Those practitioners with higher-level postgraduate qualifications who have been exposed to research in their education are likely to be involved in actual research and evidence-based activities (Lizarondo, Grimmer-Somers, & Kumar, 2011). However, these skills must be both 'put into

Experiencing the Research Role of the Consultant Radiographer

practice' and developed if they are to build on the professional body of knowledge and impact on the evidence base of care.

5.3.4 ***Is being a research lead affected by confidence and capability?***

Both parts of the study highlighted that many in consultant roles have a lack of confidence in undertaking research, and particularly in leading research. The questionnaire data revealed that 84% of respondents had been involved in proposal writing, which was encouraging in terms of skill sets gained. Disappointingly however, only 21% had previously been a research lead, and only 15% were actively leading any research. About half the number of respondents had previously been involved in a research team, but this dropped to only 28% currently so engaged.

Perhaps of most concern was that only 41% felt they were doing research to improve patient care. This is despite the fact that one of the clear expectations of '*The NHS Plan*' (DH, 2000a, 2000b) was that consultant AHP and nursing posts would ensure an evidence base and clinical questioning of practice.

Under 'previous research activity', almost 75% stated this was previously to gain a qualification and only 19% stated this was currently the case. Therefore, it is possible that those who stated they had previously been involved in research did so to gain a qualification only. This possibility was not investigated in the study and further investigation would be required to explore it.

Experiencing the Research Role of the Consultant Radiographer

Under 'current research activity', 28% recorded that they had never been involved in research. Arguably, the increase of those never involved in research could, at least tentatively, be related to those new into consultant radiographer positions. The cross-tabulation data indicates that 73% of those in post for five years or more felt they had changed their practice owing to their research work, and 91% by reviewing the work of others. This is very positive regarding evidence-based practice for the profession, but these results are much more pronounced than that for the whole group. This suggests that those newer in-post require more support and up-skilling in this area.

During the interviews, several respondents expressed a lack of both preparation for the role and confidence in doing research, as they were "scared" and confused by it. Quite a few seemed to be making this domain harder to achieve than it actually was, by 'setting the bar' too high in terms of what they could achieve, for example:

"You know, I would say, I really, really wish I had more preparation and just that gradual building up of confidence and skills. So, it's when I took on this post, I was much more ready and prepared to lead on research, lead on clinical research rather than be slumping about trying to get support and trying to find how I should go about it." (Interview 05)

All stated that if they did research they wanted it to be worthwhile and relevant to their own practice. Most felt evidence-based practice was needed, but significantly they did not always relate this to building on a body of professional knowledge. The pressure of clinical work was cited as one of the main obstacles to research happening in practice, for example:

Experiencing the Research Role of the Consultant Radiographer

“Where do I put it in my job? And I think one of my problems is actually, I still don’t really know what research is in that way ... When people ask you, do you do research? It’s quite difficult what they want to know.” (Interview 13)

It is clear from the results that issues of confidence and capability in undertaking research need to be addressed. Of the 70% at the questionnaire phase who stated they had received research training, 28% were still rating their research ability as ‘low’. In breast imaging 38% recorded their research ability as ‘low’, which is higher than that for the whole group. Overall, only 4% rated their research ability as ‘high’. This has significant implications if these individuals are to have the confidence in leading both research and others.

Interestingly, many that held a Master’s degree felt they had not received research training. Regarding the statements, *“I feel I have received sufficient training to undertake research”* and *“I feel I have received sufficient training to lead research”*, 20% of those with a Master’s degree did not feel they had received training to undertake research and 46% considered they had not received sufficient training to actually lead research. This tends to indicate that more ‘up-skilling’ in this discipline is required. Whilst 87% of those in radiotherapy and oncology reported they had received research training, again this could be linked to length of time in post and overall confidence.

The results show a lack of confidence and ability in being able to lead research projects. A major factor in the interview discussions became the term ‘research’ and what that meant to clinical staff. Research was often viewed as ‘an ivory tower

Experiencing the Research Role of the Consultant Radiographer

activity' and there was reluctance for clinical staff to become actively involved (Hardy & Snaith, 2007), as noted by:

"Yeah and I think that's a real barrier, isn't it? The doing research is just very, very unfamiliar to people." (Interview 16)

The questionnaire and interview results show variance between radiographers and nursing. For example, the study by Woodward, Webb and Prowse (2005 and 2006) demonstrated that most of their nurse interviewees could identify possible research opportunities or projects.

The interview findings showed that most consultant radiographers were doing service evaluation and audit on their work practice, but fewer were conducting actual research and then publishing that work. On the whole, the sample was more research 'users' than 'doers'. Hafslund, Clare, Graverholt, et al. (2008) however argued that *Evidence Based Practice* (EBP) does not always mean radiographers have to be doing research, but it is critical that the work they do is based on evidence, appraised and evaluated.

There appears to be confusion in radiography as to what the research core domain actually means. However, the meta-synthesis undertaken by Humphreys, Johnson, Kirshbaum, et al. (2007) illustrated this confusion in nursing too. Their findings showed that where nurse consultants had undertaken research the main focus had in fact been in service development, which was an area where they could make the greatest impact. They observed that in reality the core domain of research was loosely achieved by predominance in audit; and that this usually was achieved as

Experiencing the Research Role of the Consultant Radiographer

part of a team. The above findings are corroborated by this study as most interviewees stated they were involved in audit and many appeared to find the word 'audit' less threatening than 'research', for example:

“Sometimes, I do think it’s really difficult to define the domain of research; because I’ve done lots of audit work which obviously is looking at evidence-based practice in your clinical day-to-day job. And with ... I’ve worked with other radiographers on certain audits; so is that breaching into the research domain or is it purely just individuals undertaking research?” (Interview 08)

Pager, Holden and Golenko (2012) observed that an individual’s desire to do research is influenced by a positive attitude towards it, together with confidence, the facilities, and opportunities to undertake it.

The results from the interviews corroborate this, as those who felt confident and supported in undertaking research activity tended to be the ones who fulfilled the research core domain. Conversely, those with a lack of time, or indeed a perceived lack of time, and a poor team culture towards research, were less likely to undertake research. Therefore, it could be argued that extrinsic factors such as organisational and cultural factors will have a strong influence on intrinsic ones, such as an individual’s confidence and capability.

5.3.5 Does lack of time available affect the research core domain?

Lack of time available was quoted as the biggest barrier to research being undertaken and study participants felt that any additional work would lead almost to

Experiencing the Research Role of the Consultant Radiographer

breaking point. A few appeared stressed by the workloads and pressures of their jobs and the expectations of them, for example:

*“... It’s about what impact you wanted to have on your general life, I think ... Yeah, it is and I mean I, you know, for example I’ve got home at, I don’t know 7:30 last night and Monday night it was 8:00 o’clock. And, you know, the thought of doing more work on top of that it’s, for me, it’s not manageable.”
(Interview 16)*

Several stated they were doing the research element in their own time. Often this appears to be the case in more senior roles, but professionally should this expectation be challenged? For those trying to achieve the research core domain, certainly it would be unacceptable for this to be completed solely in their own time. Integration of the research aspect of the role needs to be valued by all in radiography, rather than viewing it as a bolt-on extra to be dropped in favour of day-to-day operations, if the latter demands it.

A number of interviewees were successful in managing to integrate the four core domains, and it is very doubtful their workloads were any less onerous than that for others, but they appeared to have more autonomy in managing their work. A few stated that good leadership and self-management were needed to ensure they structured their time effectively.

A job plan with dedicated time therein appeared to be vital, with clear and realistic expectations for the working week. Those who had work plans with set sessions during the week were more likely to be undertaking research regularly, because they had the allocated time, as noted by:

Experiencing the Research Role of the Consultant Radiographer

“I think that’s probably when it goes wrong with some consultant radiographer roles because they don’t have a job plan ... And I think from what I understand from speaking to other consultants is that they don’t have job plans, but vague job descriptions. I think that’s the big problem ... Importantly with a job plan that’s agreed by your Department, you know you stick to that job plan. My job plan has changed twice since I came because of service needs, but I still keep my two research sessions.” (Interview 01)

5.3.6 Should research be a core domain?

Many interviewees cited research as the hardest domain to satisfy and this led to diversity of opinion as to whether it should even be a part of their role.

There is virtually a 50-50 split at the questionnaire phase as to whether research should or should not be a core domain. This is of concern if these individuals are going to actually lead research.

For those in breast imaging 59% deemed that research should not be a core domain; which was higher than the result for the overall group, and as opposed to 37% in ultrasound and 17% in radiotherapy and oncology. Thus, those in the breast imaging roles tend to be more averse towards research and/or have issues in being able to fulfil the research core domain.

Of those with a Master’s degree qualification, 81% believed research should be a core domain, so higher academic attainment does appear to increase acceptance of research.

Experiencing the Research Role of the Consultant Radiographer

Many of the interviewees, 80%, felt research should be a core domain and that this defined the role differently from that of advanced practice. Overall, this is a much higher response in favour of the core domain than that gleaned from the questionnaire data, and indicates that those who agreed to be interviewed were largely in favour of the research domain. Again, those working in breast imaging appeared to be less in favour of the research core domain. Only 63% of those in breast imaging believed research should be a core domain, as opposed to 100% recorded by those in ultrasound, and in radiotherapy and oncology.

Some of the interviewees felt the four domains should be challenged and that the research domain be removed from the role, as per:

“I think we should be challenging the four core domains at the new culture of austerity and trying to make sure that we are working what we’ve got to full potential, and whether it is really feasible for clinically working consultant radiographers ...” (Interview 12)

And three of the interviewees (n=25=12%) disclosed that the four domains were included in their job descriptions so that their posts could be banded at the consultant level:

“... because you couldn’t get the consultant post agreed unless they put that in. So it had to be there ... So, they had to put something in there ...” (Interview 10)

Therefore one needs to question if these individuals are actually consultant practitioners or are they working at advanced practice level?

Experiencing the Research Role of the Consultant Radiographer

Either there is a need for cultural changes towards the acceptance and requirement for the research core domain so that this element of the role can be achieved; or if this element of the role is not being fulfilled, as noted by several study participants, then does the definition of the role need to be changed to reflect practice? Currently, there is disparity across the practitioners and this needs to be resolved if such posts are to be credible and stand up to scrutiny. This is an area that requires further investigation.

Many posts appear to have been developed to meet both service demand and the clinical pressures of waiting lists, and this may be at the detriment of evolving new ways of working (Harris & Cornelius, 2012), as commented by one of the interviewees:

“I think, for most breast consultants. They have a high percentage of clinical work. So, I’m 70%; so, you’ve got 30% of your week which is supposed to fulfil the other three aspects of the consultant role, you know? And in fact, they probably wouldn’t really care if I didn’t do any of that ... They’d probably be quite happy as long as the clinics are covered. So because that’s what they need you for really and I accept that, you know?” (Interview 10)

This is supported by the survey from the University of Hertfordshire (CoR, 2010b) which observed that the clinical aspect of the consultant role is undertaken to such an extent that this could be detrimental to the other aspects of the role.

Curiously, 45% of those who deemed that research should be a core domain had no allocated research time. However, 34% felt protected time for research was needed and 11% considered this should be mandatory to enable it to occur, and 18%, contended the clinical role needed to be reduced to facilitate the research domain.

Experiencing the Research Role of the Consultant Radiographer

Only four of the opinion statements in the questionnaire achieved consensus, indicating substantial diversity across the group of practitioners in their views towards research. The statement *“My other roles are more important than research”* caused the greatest diversity with 62% in breast imaging agreeing with this statement, as opposed to 37% in radiotherapy and oncology.

5.3.7 **What is the level of research activity and publication rates?**

Despite all questionnaire respondents agreeing with the statement *“Research provides the evidence to direct patient care”*, there was diversity in opinion as to whether or not consultant radiographers should be the research leads ensuring this evidence was gathered.

All felt that being a research user, and basing actions on an evidence base, were integral to their roles. However, in response to *“I have received sufficient training to lead research”* respondents were less confident, with only 27% agreeing with this statement. Nonetheless, if consultant radiographers do not perform the role of research lead then this may be a significant factor affecting publication and presentation activity in radiography.

From the questionnaire data 68% stated they had never published and 81% had not published in the last twelve months. This has significant implications for building on the professional body of knowledge; and infers that although the majority state they would change practice based on evidence, they do not feel it is an integral part of their role to collect this evidence base.

Experiencing the Research Role of the Consultant Radiographer

There were big variations across the three main disciplines, with 76% in breast imaging never having published, as opposed to 62% in radiotherapy and oncology, and 95% in breast imaging not having published in the last twelve months, as opposed to 43% in ultrasound, and radiotherapy and oncology. Therefore, there may be cultural and work practice differences in the breast imaging group that may be inhibiting the research domain and requires further exploration.

A few felt they received support with publishing, but most were less confident. Publication by radiographers does appear to be under par compared with other AHPs (CoR, 2005b), and again appeared to be a topic shrouded in disparity of expectation amongst the interviewees. Activity in publication by consultant radiographers is still at a low level and therefore not even near that required to influence or build on a professional body of knowledge. However, Gerrish, Guillaume, Kirshbaum, et al. (2007) contended that those in clinical nursing leadership roles also often have a lack of research skills. Thus, there would appear to be research knowledge gaps in clinical practice that may not be unique to radiographers.

5.3.8 **Does the level of support affect the research core domain?**

Many of the questionnaire and interview participants indicated a lack of managerial understanding of the research domain of the role. The main focus for managers was often cited as waiting list targets, for example:

Experiencing the Research Role of the Consultant Radiographer

“I think from management there’s a very poor attitude to the research ... Because you know, to managers we get as many patients off the waiting list and extending working hours and doing all that.” (Interview 23)

Engaging managers in research and developing its culture appears to be a key facilitator, as managers often hold the power of time release and target setting in personal development reviews (PDRs). Managers appear to have the “*capability to facilitate or stifle change*” (Kelly, Piper, & Nightingale, 2008, page e74).

At the interview stage, respondents indicated that largely the non-clinical aspects of their roles were not understood by management and that consequently future service development was difficult, for example:

“But I still think a lot of managers don’t really understand the role either. They might choose not to understand it in terms you know, they want just probably clinical work ... When I mentioned research and things, I could see that from the look on her face, she didn’t really fully understand what I was talking about ... it’s not something that’s really hugely expected and I don’t think she would, I honestly do not think she would mind if I didn’t do any at all.” (Interview 05)

This is supported by consultant nursing studies (Woodward, Webb, & Prowse, 2006; Burton, Bennett, & Gibbon, 2009) so is not unique to radiography. Indeed, Woodford (2006) considered that nurse consultant roles were designed not to have management and budgetary control, but to be autonomous, and to instigate and lead change; but without such control this was challenging and thus required a positive management ‘buy-in’ to all aspects of the role.

The College of Radiographers ‘*Scope of Practice*’ Report (CoR, 2008) suggested that a number of managers questioned the “*added value*” of consultant radiographer

Experiencing the Research Role of the Consultant Radiographer

posts; as these were viewed by managers as costing more than, and bringing few extra benefits above, an advanced practitioner. So service managers and consultant radiographers need to foster a “symbiotic” relationship for role success (CoR, 2009).

Those interviewees, who felt they received “managerial support” for their role, i.e. an understanding of the ethos of their role, and had resources such as allocated time, were engaging in the research core domain. Therefore, a few respondents felt one way The Society and College of Radiographers could help was by educating managers more about the role and the rationale behind the four core domains, as noted by:

“I don’t know whether it’s a bigger issue of addressing managers ... and looking at how the jobs are implemented.” (Interview 22)

Many of the study participants stated that other radiographers, although generally supportive of their larger roles, did not understand, and thus appreciate the need for, the research element. So again an understanding of the role and the reasoning for the four domains must be cultivated within the rest of the profession, as illustrated by:

“But it has been intimated that because I’m sitting at my desk, that ... I don’t know what they think I’m doing. I’m usually working on presentations. But sometimes they say, well, you can’t do that all day. And I thought, well, yes I can because I’ve got loads of stuff to do. I don’t think people realise.” (Interview 25)

Opportunities for supportive collaboration with research radiographers often appeared to have been missed. Indeed, in diagnostic radiography the role appears to have little recognition, one interviewee even stating: *“I would not know what to do*

Experiencing the Research Role of the Consultant Radiographer

with one". In radiotherapy and oncology, research radiographers are more commonplace and sometimes interviewees indicated that the roles worked well together, but unfortunately a few cited rivalries between the respective roles, for example:

"It is really hard having people whose jobs overlap [research radiographers]. Without defined boundaries. And they're kind of knowledge is power ... It's not just having jobs, you know, because I'm sure if you have the right people in the right jobs, and then it could work really well ..." (Interview 13)

5.3.9 Is there a lack of collaboration with academia?

Collaboration with radiographic academics would help to ensure applicable clinical research was undertaken (Reeves, 2008; Hogg et al., 2011) and yet collaboration with higher education institutions (HEIs), who may be able to offer research advice and development, was uncommon. Instead, education and clinical providers appear to be researching separately, as confirmed by Jackson (2007).

Those who had linked with an HEI had found it helpful, but most had found it hard to make those contacts, or had no relationship or link.

The relationship between clinical consultants and academics varies to that of nursing. The results of the studies by Woodward, Webb and Prowse (2005 and 2006) revealed that all the nurse consultants they interviewed had a contract with a university, enabling the latter to share educational and research activities with them.

Experiencing the Research Role of the Consultant Radiographer

Such collaboration does not tend to exist in radiography. Indeed, only two of the interviewees had such an arrangement, as per:

“It’s been key to both of us, me and my academic partner. And it’s done us both a lot of favours down the line. I think the big thing with that is that it’s been a research partnership rather than me being the clinical conduit for their research ... We both have got different skills but they contribute equally to the partnership.” (Interview 07)

As Snaith (2012) commented:

“... collaboration, within and between clinical and academic organisations is crucial to develop radiography research activity and an underpinning culture ...”
Snaith (2012), page 1

5.3.10 Is there a lack of collaboration with other health professionals?

There was a significant lack of collaboration with other health professionals and AHPs, which was another opportunity missed, especially given the central roles of radiographers in care pathways. Notwithstanding the multidisciplinary environment of radiography, most clinical radiographers are not contributing to the research knowledge base (Snaith, 2012).

Snaith and Hardy (2007) debated that the lack of radiographic research activity is often linked to poor understanding of the relevance of research to clinical activity. They discussed various ways in which radiographers can become involved in research, but commented that radiographers are often excluded from research

Experiencing the Research Role of the Consultant Radiographer

teams, noting that “research active does not mean undertaking the imaging for another person’s study” (page 144).

Several interviewees described conflict with medical roles and that in effect, hierarchical boundaries were imposed on their own roles. Woodford (2006) also highlighted that the role development opportunities for radiographers may precipitate territorial conflict with other professionals trying to protect their own domains of practice. She observed that junior radiologists, in particular, are sometimes threatened by such roles.

This was confirmed by some interviewees, for example:

*“I mean, we’re only able to achieve with their [radiologists] help ... I mean, the radiologists that we work with. If they want to be a barrier to anybody’s development, they can be ... It is, and that has been our stumbling block ...”
(Interview 21)*

It may be that radiography has more hierarchical barriers to overcome than other health professions (Bolderston, 2005), although the studies of nurse consultant practice by Woodward, Webb and Prowse (2005 and 2006) also discussed ‘professional antagonism’ with clinicians.

5.3.11 Does the organisational culture affect research?

At the questionnaire stage 37% reported a poor research culture in their department, which would clearly have adverse implications for any research activity if there was a lack of interest or motivation from the team undertaking this task. It could be argued

Experiencing the Research Role of the Consultant Radiographer

that the role of the consultant radiographer is to lead research and change the culture by supporting and including others, and it may be the lack of leadership which is inhibiting any team development. Conversely, it may be that the culture of the team is making it difficult for the consultant radiographer to implement this side of their role.

Touati, Roberge, Denis, et al. (2006) believed that effective clinical leaders should have shared visions and shared values with other staff, as the clinical leader is not solely responsible for creating change. What they emphasised though is that often there is a resistance to change in an embedded culture.

This was confirmed by some interviewees, for example:

“ ... if the culture isn't really there set up for research, just trying to achieve anything can be quite difficult sometimes ... I think sort of apathy, you know ... just the general lack of enthusiasm and, you know, this is not what we do. We're just here to scan patients and see them on their way ... that attitude, you know. But if the culture is not orientated, they wouldn't be excited about research and finding out new things.” (Interview 14)

Many at interview described a lack of departmental research culture. Those who were developing a research culture largely felt it was the consultant radiographer's responsibility to be the driver for this change. Those who had more interactive cultures expressed the need to include others, for example:

“... One of my passions is to instil audit and research into radiographers within our unit and to generate that culture. As I'm looking at audit and starting off with audit and then moving onto research and developing that culture, really. I'm quite passionate about that.” (Interview 01)

Experiencing the Research Role of the Consultant Radiographer

Hogg, Hogg and Henwood (2008) stated that consultant radiographers should be “catalysts for engaging stakeholders and empowering others” (page e44).

Encouragingly, during the interviews many talked about supporting other staff.

5.3.12 **Is succession planning in place?**

Few had succession planning in place and stated that if they were to leave their role the post would probably be lost. For the profession as a whole, there is a requirement to identify and develop potential consultant radiographers, to ensure succession planning is in place, and those with potential are up-skilled prior to being upgraded, as per:

*“Basically, when I went into the secondment I was already classed as a clinical expert in terms of reports and ... but it’s all the other aspects of the job that had not developed or expanded. So, by using the secondment it has allowed me to continue doing the clinical work but also to look at the other elements.”
(Interview 08)*

The trainee consultant post appears to be a sensible and viable approach, yet to date only seven (six of these held within a single Trust) have had the opportunity of experiencing the degree of mentorship and supervision designed to up-skill.

Nightingale and Hardy (2012) noted that all the trainee consultant radiographers in their assessment project expressed concern regarding sustainability of consultant roles and the justification of an increase in salary. The project team pointed out that this in itself could actually demonstrate a lack of leadership and strategic planning

Experiencing the Research Role of the Consultant Radiographer

skills and stressed these roles are not simply career development from advanced practice to consultant practice, and they should not be viewed as career promotions.

A small number of interviewees appreciated the need to pass skill sets on to ensure not only growth of the profession, but improvements in patient care, for example:

“We’ve got a breadth of knowledge that you need to pass to other people ... It’s not just about the patients. It’s about the patients of the future. And the only way you’ll help the patients of the future is by doing research, by implementing new technologies and you know, by making sure you’re educating those that come through.” (Interview 24)

A few stated that a lack of consistency in roles was affecting the growth of the role and that accreditation would be helpful, as per:

“The ... accreditation for the consultants is brilliant ... It gives substance to the title and it’s transferable then if everybody’s assessed in the same way... I don’t know who said it, there was a quote somewhere that said, “It’s relatively easy to demonstrate consultant practice; but it’s quite hard to maintain consultant practice” ... So they can see you’re accredited at the standard and this is what I do.” (Interview 15)

Several respondents described an overall lack of professional drive for radiographers to push boundaries.

“As many other professions are much better at using ultrasound for research than radiology departments. It seems integral to certain professions and they are overtaking radiology in some aspects of ultrasound research - e.g. rheumatology.” (Questionnaire comment)

Experiencing the Research Role of the Consultant Radiographer

This traditional “subservient” (Interview 01) role of the radiographer was deemed as a professional hindrance and it was considered that radiographers were different to other AHPs in this respect, for example:

“It’s quite often radiographers I find, having been the radiographer (Laughter) are quite subservient, I think, and they don’t push themselves forward enough. I think that’s the big problem ... And in a lot of cases, we are our own worst enemy...” (Interview 01)

Those who were in favour of the four core domains, including the research domain, felt this would help to advance professional status, as noted by:

“[without the four domains] ... we would always be perceived as just radiographers or just whatever you are or just a nurse, whatever, if you’re not perceived to be making a difference to the service. And I don’t mean just you know, that you’re just there doing the graft.” (Interview 23)

Certainly, investment in those with the potential for these roles appears to be a necessity if the profession is to grow.

5.3.13 The Main Barriers

The biggest barriers noted in the questionnaire were lack of time, lack of skills and the clinical workload. Lack of time was the biggest barrier quoted at interview. This is in agreement with the main barriers identified in studies by Pager, Holden and Golenko (2012) and Williams (2012).

Williams (2012) contended that, arguably, all the above barriers are really a “*symptom of immaturity*”, and that some are defence mechanisms and reasons

Experiencing the Research Role of the Consultant Radiographer

forwarded as to why the person has not participated in research. She concluded that many of the barriers could be *“resolved with adequate and appropriate mentorship alongside timed release measures”* and that *“novice researchers need to build their confidence and gain experience”* (page 61).

“Isolated” and “lonely” were words frequently used both during the interviews and on the comment sections at the questionnaire phase, and may be a symptom of not only a lack of support, but also a lack of confidence.

“There is a sense of loneliness being a Consultant Rad; you are not one thing or another.” (Questionnaire comment)

At interview stage many stated that research was the first thing they would avoid if possible and that sometimes the barriers were ‘perceived’, or even self-enforced rather than real, and *“with an intelligent overview”* can be overcome, for example:

“Time. But that’s around planning and expectation. I’m not convinced there are real barriers. I think people make barriers themselves. And I think barriers are often very, an easy excuse. And I don’t mean that in a nasty way ... I mean, actually, when you get down to it, it’s not as hard as it’s perceived. But it’s just made to sound difficult. And I think barriers are often put in the way as an excuse for not doing rather than a sort of real reason why engagement doesn’t really happen ... I mean, everybody, no matter what their job is, time will always be the most challenging thing. But part of that is about managing time.” (Interview 07)

5.3.14 **The Main Facilitators**

The top facilitators listed during the questionnaire phase were skills, interest and time. 'Financial' ranked last as a research facilitator, and was only mentioned briefly by two interviewees, and was therefore not rated significantly enough during the coding to become a theme; despite other papers (Harris, 2000; CoR, 2005b; ACORRN, 2007) indicating that a lack of research funding was a significant issue. Training, culture, and time appear to be the 'big three' themes raised at interview and are supported by other studies (Winch, Henderson, & Creedy, 2005).

5.4 **A CONCEPTUAL FRAMEWORK**

A Conceptual Framework, as per *Figure 12*, of the barriers and facilitators can be developed illustrating potentially required outcomes, which would aid the development of the consultant radiographer post. These are:

- Understanding of roles by management
- Goals and outcomes - regularly evaluated
- Job plans with integration of core domains
- A degree of standardisation of roles
- Succession planning built-in to posts
- Mentorship and training - preparedness
- Accreditation
- Master's/Doctoral level training
- Trainee/preceptorship posts
- Joint contracts/collaboration with HEIs
- Increase in publication and presentation rates

Experiencing the Research Role of the Consultant Radiographer

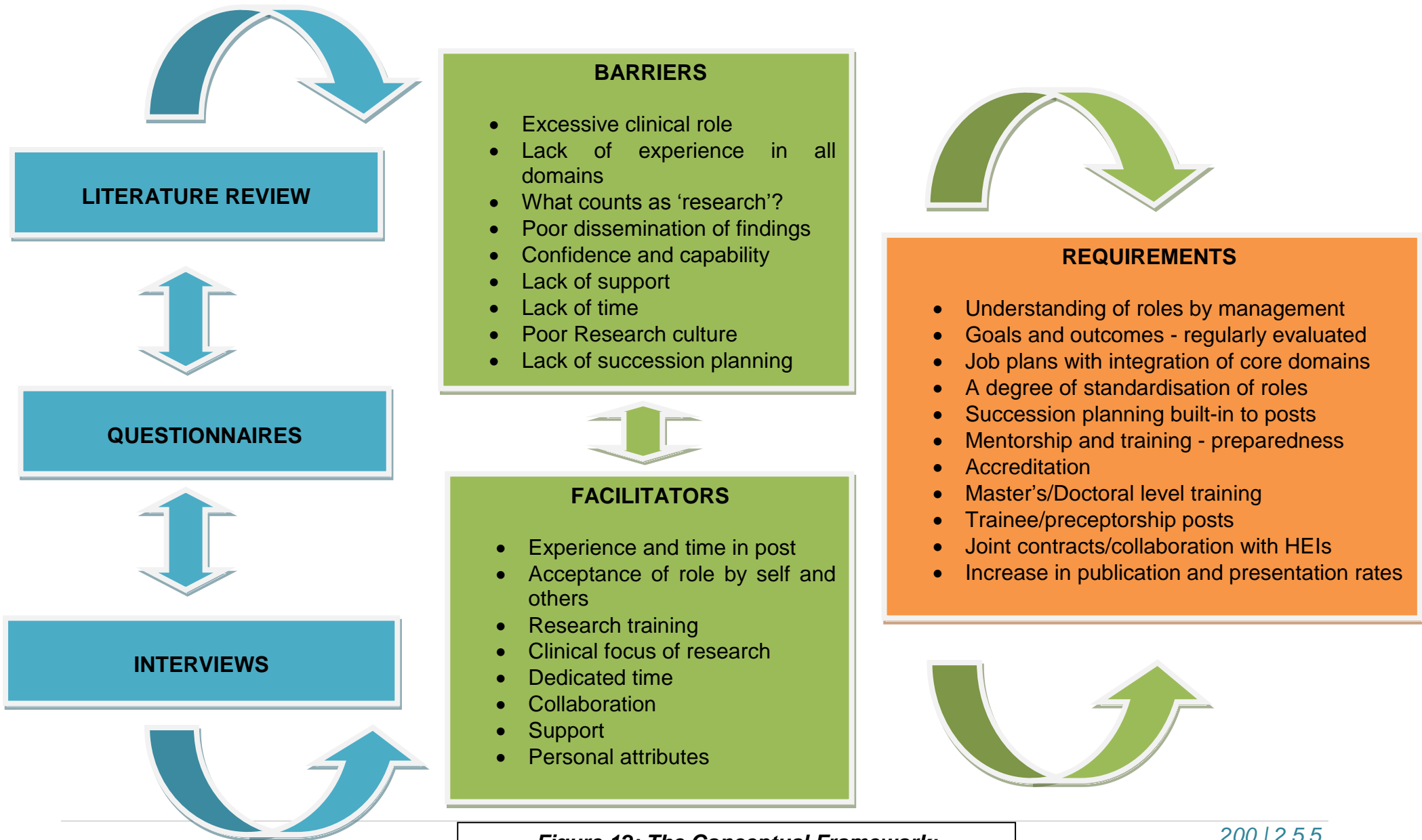


Figure 12: The Conceptual Framework: showing the barriers and facilitators to research and the changes required to support those in post

Experiencing the Research Role of the Consultant Radiographer

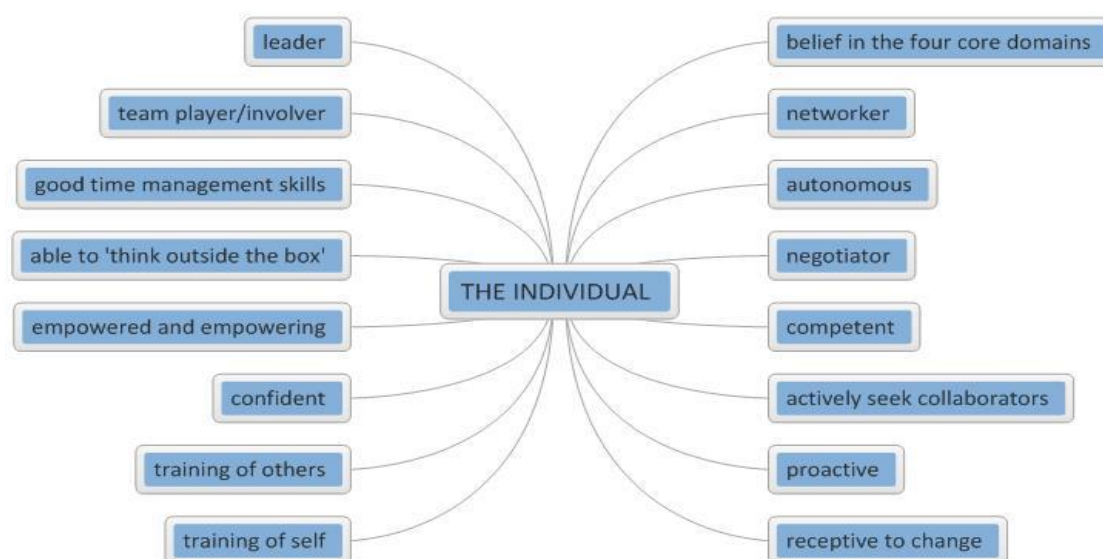
Experiencing the Research Role of the Consultant Radiographer

A model of personal characteristics, approaches, beliefs, and skills that lead to research being undertaken is useful in aiding our understanding of the latter, as per *Figure 13*. When all these factors come together the individual is more likely to be proactive about research. The reverse scenario might be that an individual, who lacks confidence, also lacks skills in negotiating with managers and/or developing collaborations. Negative influences are less likely to support research as a core activity in itself.

The individual needs to feel confident enough to admit any areas of their own practice and ability where upskilling is required, for example:

“... if we’re going to call ourselves leaders and consultants and all that then it’s important to confront areas where we feel we lack of confidence.” (Interview 05)

THE INDIVIDUAL



**Figure 13: Individual Attributes:
required for successful implementation of the research core domain**

5.5 **SUMMARY OF CHAPTER**

This chapter has discussed the main questionnaire and interview results.

Overall improvements must be made to ensure that the consultant radiographer role is delivering on current expectations and is safeguarded for the future of the next generation of radiographers. Currently, evaluation and impact into consultant AHP and nursing roles is lacking (CoR, 2008; Woodward, Webb, & Prowse, 2006) and is thus urgently needed so that the parity of roles can be determined.

The difference between an advanced practitioner and a consultant practitioner is in the implementation of the four core domains of consultant practice. Fulfilling the clinical role is imperative and integral to the profession at consultant level; however, if it is undertaken to the detriment of the other domains then these practitioners are not operating at consultant level. Three of the interviewees actually disclosed that the four domains were included in their job descriptions so that their posts could be banded at the consultant level. Therefore it is questionable as to whether these individuals are consultant practitioners; are they, in reality, working at the advanced practitioner level only?

Some of the interviewees felt the four domains should be challenged and that the research domain be removed from the role. There is a need for cultural change towards acceptance of the requirement for the research core domain so that this element of the role can be achieved. Currently, there is disparity across the

Experiencing the Research Role of the Consultant Radiographer

practitioners and this needs to be resolved if such posts are to be credible and stand up to scrutiny. This is an area that requires further investigation.

Certain radiography disciplines seem to be coping better than others in being able to undertake the research core domain. Notably, those in radiotherapy and oncology appear to be best prepared to facilitate the research core domain, and those in breast imaging appear to have the most barriers. This difference in preparedness is worthy of further investigation, and may help address the challenges associated with embedding the research domain into all consultant radiographer posts.

Examining the data from the questionnaire and interview phases of this study, it was possible to develop a conceptual framework that might better support consultant radiographers in-post and safeguard the research core domain of the role.

Understanding the role from the outset appears to be one of the major lessons gleaned from the data.

A number of requirements to facilitate a required change are indicated:

- Managerial understanding of the research domain of the role.
- Goals and outcomes set at personal development reviews (PDRs) - regularly evaluated.
- Job plans with integration of the four core domains.
- A degree of standardisation of roles and learning from more successful posts.
- Succession planning built into posts to safeguard for the future.
- Mentorship and training – preparing the next generation.
- Accreditation – to ensure acceptable standards and achievements, both within the role and across the four domains, are maintained.

Experiencing the Research Role of the Consultant Radiographer

- Master's level training as a minimum, with Doctoral level preferred, to ensure post holders have the necessary research skills.
- Trainee/preceptorship posts – to build on skill sets and confidence.
- Joint contracts/collaboration with HEIs – doing research in teams and ensuring research undertaken imparts real value to the clinical setting.
- Increase in publication and presentation rates – so that radiographers are building on the professional body of knowledge.

CHAPTER 6

SECOND REVIEW OF THE LITERATURE

6.1 **INTRODUCTION TO CHAPTER**

A second in-depth review of the literature was undertaken from January to April 2013, after the data collection stages.

The aim of the second review was to explore the research core domain in more detail, and to compare previously documented problems experienced by consultant practitioners with the study results and issues raised by the conceptual framework developed throughout the work.

The key findings from the literature are examined as per the main 'requirements' of the conceptual framework; as seen in *Figure 12*, page 201

6.2 **KEY FINDINGS FROM THE LITERATURE**

6.2.1 **Understanding of the Role**

Consultant radiographers are struggling to fulfil the four core domains, especially those of research and education, and clinical practice is being undertaken to the detriment of these elements (CoR, 2008); as such:

Experiencing the Research Role of the Consultant Radiographer

“... there is an emerging concern over a lack of agreed definition of extended, advanced or consultant practice”

College of Radiographers (2008), page 42

Many posts have developed owing to unique regional and local service requirements, giving rise to roles in diverse specialist settings. Various services and specialties will no doubt have different demands on consultant roles; thus, achieving a common set of role requirements will be difficult (McSherry, Mudd, & Campbell, 2007). As noted by Rees (2012) the lack of guidance has:

“... resulted in roles being developed in an inconsistent manner, often designed to address a particular service ... Lack of consistency in the structure, preparation and expectations of these roles has compromised its evaluation and development.”

Rees (2012), page 6

However, if roles are developed too locally, without a wider strategic overview, then the interpretation and implementation of the four core domains becomes more difficult. The results from the ‘*Scope of Radiographic Practice*’ Report (CoR, 2008) illustrated confusion in practice regarding the role of consultant radiographers, with one centre in the survey claiming to have five consultant radiographer posts; however, the Agenda for Change bandings (The NHS Staff Council, 2011) for these individuals ranged from 6 to 7.

Consultant roles should be developed to help ensure that experienced practitioners remain in clinical practice whilst teaching and leading others, innovating, and changing practice based on evidence. Such roles are required to respond to the changing needs and changing demands of healthcare users (Graham, 2007).

Experiencing the Research Role of the Consultant Radiographer

The results of Graham's (2007) work provided insights for other individuals on how to plan their learning and development in consultant roles. He felt that many of those in-role "*have battled to find achievement and acceptance*" (page 1809). One of the key findings from the work by McSherry, Mudd and Campbell (2007) was how many felt their roles were "*too big and diverse*" (page 2072), which made the latter unmanageable or unachievable.

There appear to be problems for those in-post in negotiating an "*NHS reality*" (Graham, 2007, page 1813) with large clinical workloads, and this may actually stifle professional growth. Hence, post-holders and managers must understand the key aspects of the role and consider how to achieve this, in practice, at the outset. The consultant practitioner cannot operate in a vacuum and will require recognition by management of the need for the core domains, even if this is within organisational constraints (Touati et al., 2006).

Price (2012) reviewed the publication '*Team Working in Clinical Oncology*' (RCR & SCoR, 2012), noting that the new document proposes common purpose across the professions, with leaders who are appropriate for the role rather than simply on the strength of their professional or technical backgrounds. He questioned why such a document is needed "*if all is well?*" and mentioned that both The Royal College of Radiologists and The Society and College of Radiographers must consider that many departments are indeed not working in this way. In addition, he stressed that whatever colleges agree will not necessarily come to fruition in local clinical settings.

Experiencing the Research Role of the Consultant Radiographer

The Scottish Government document on '*Professionalism in Nursing, Midwifery and the Allied Health Professions in Scotland*' (Scottish Government, 2012) affirmed the requirement of individual practitioners to be both reflective and receptive to new ways of working. Additionally, the report from the Australian Inter-Professional Advisory Team (IPAT) on '*Advanced Practice in Radiography and Radiation Therapy*' (IPAT, 2012) emphasised that patients are becoming better informed and have "*enhanced expectations*", therefore an evidence base for practice is crucial.

The IPAT '*Advanced Practice in Radiography and Radiation Therapy*' Report (2012) confirmed that the advanced practitioner should be an expert in clinical practice, but stressed that the consultant radiographer has a predominant integrating role by:

"... providing clinical leadership within a specialism, bringing strategic direction, innovation and influence through practice, research and education."

IPAT (2012), page 15

The document also accentuated the need for "*rigorous research*" to ensure:

"... clinical leadership [is] keeping up-to-date with the latest research, implementing changes in protocols, treatment and interacting at a higher level with professionals, as well as educating others, and contributing to developments in practice."

IPAT (2012), page 41

The new '*Education and Career Framework for the Radiography Workforce*', by the College of Radiographers (CoR, 2013), stated clearly the outcomes required of a consultant practitioner. The key outcomes relating to the research core domain being:

Experiencing the Research Role of the Consultant Radiographer

2. *Integrate effectively the diverse roles of the consultant: clinical practice, professional leadership, education and research.*
6. *Initiate and lead audit, peer review and research, disseminating outcomes through presentation and publication.*
15. *Take a critical role in the evaluation of new technologies, identifying their potential and developing strategies for their implementation.*

College of Radiographers (2013), pages 23-24

However, increasing research capacity is a multilevel activity, and requires integration and collaboration between an individual, team, and the organisation (Pager, Holden, & Golenko, 2012). Thus, a 'whole system' approach is needed, where research is conducted *"through allied health professionals, with allied health professionals, and by allied health professionals"* (Ibid, page 54).

As the Chief Nursing Officer commented:

"To give people who use the NHS the best possible care and treatment, our clinical researchers need to be given the tools they need to develop innovative, world-class care and treatment ... I want to see successful partnerships between health and care providers and universities flourish so they provide the best environment to support high quality research, education and training."

Christine Beasley, Chief Nursing Officer (DH, 2012), page 1

The 2012 joint RCR and SCoR document on *'Team Working in Clinical Imaging'* (RCR & SCoR, 2012) observed that although there has been a small increase in radiologist numbers, one out of thirteen post vacancies remains unfilled. Radiographer numbers appeared to be steady, but the profession still remains on the Migration Advisory Committee's *'Shortage Occupation List'* (2012). Therefore, effective team working, underpinned by appropriate skills and support, is paramount in sustaining imaging and treatment requirements.

Experiencing the Research Role of the Consultant Radiographer

6.2.2 **Standardisation of the Role with Succession Planning**

Some managers report a shortage of people with the necessary skills to fulfil the higher level roles (CoR, 2008). Essential to the success of such posts is “preparedness”, through succession planning and developing the potential of the future workforce; thus justifying the necessity for trainee and preceptorship posts (Graham, 2007). Individuals should already be clinical experts in their field and therefore it is the other core domains that require development. The step from advanced practitioner to consultant practitioner is not a progressive one and requires additional skills and learning; particularly in undertaking research and skill sets for the latter. Law (2006) discussed sustainability of consultant roles noting that many appointments have resulted from local service demand, and that for roles to be nationally recognised there is a justification for accreditation. He commented that:

“Regrading to consultant must not be used as a way of rewarding a job holder spuriously.”

Law (2006), page 29

The College of Radiographers ‘*Consultant Radiographers: Succession Planning*’ document (CoR, 2009) asserts that the numbers of appointments into consultant practitioner roles in both diagnostic and therapeutic radiography has been slow, owing to a lack of:

- *suitable candidates;*
- *clear clinical career pathways ;*
- *post-registration educational development pathways;*
- *reluctance from NHS trusts and service leaders;*
- *a misunderstanding about the role from colleagues.*

Experiencing the Research Role of the Consultant Radiographer

Drennan and Goodman (2011) commented on the growth of nurse consultant roles and that the overall picture is difficult to assess because of the variation across both regions and specialties. This is supported by the growth in the number of radiographers; which in recent years has accelerated overall, but largely in one specialty, namely breast imaging. Therefore, the growth chart for radiography consultant posts is actually skewed in one discipline.

Without adequate succession planning and investment in the next generation of consultant practitioners, and despite their real value, as current post holders leave and their roles not replaced, the number in post might actually begin to decline (Harris & Cornelius, 2012). Indeed, most departments are not seeking proactively to increase the number of consultant posts, or to develop new posts in different specialties (CoR, 2008).

Table 22 illustrates the growth of consultant radiographer numbers across the disciplines from the time of the questionnaire to the date of final project write up and highlights the greatest increase in consultant roles has been within breast imaging. Of interest, is that four consultant radiographers have left post since this project commenced until to date. According to The Society and College of Radiographers database records these positions were not replaced and so development opportunities have been lost to the profession.

Experiencing the Research Role of the Consultant Radiographer

Table 22: Growth of Roles

Scope of Practice	Number in consultant role at time of questionnaire December 2011 (n=61)	Number in post as of May 2013 (n=74)
Breast Imaging	23 (37%) (1 trainee)	34 (47%) (2 trainee)
Ultrasound	11 (18%) (1 trainee)	2 left post 11 (15%)
Radiotherapy and Oncology	8 (13%)	11 (15%) (1 trainee)
GI Imaging	6 (10%) (1 trainee)	5 (7%)
Plain film and general	4 (6%) (1 trainee)	1 left post 5 (6%)
Emergency Care	3 (5%)	2 (3%)
MRI	3 (5%)	1 left post 3 (4%)
Endovascular	1 (2%)	1 (1%)
Nuclear Medicine	1 (2%)	1 (1%)
CT	1 (2%) (1 trainee)	1 (1%)
Gender		
Male	4 (7%)	5 (7%)
Female	57 (93%)	68 (93%)

(GI = gastrointestinal; MRI = Magnetic Resonance Imaging; CT = Computed Tomography)

The College of Radiographers 'Consultant Radiographers: Succession Planning' document (CoR, 2009) stressed the need for proper succession planning to ensure that posts remain viable. This will require the upskilling of potential candidates in the

Experiencing the Research Role of the Consultant Radiographer

four core domains; so that when a post holder leaves, others are prepared to fill the vacancy, as noted by:

“The creation of a consultant post should not be related to a particular individual but to an identified service requirement such that the post does not cease when an individual leaves employment.”

College of Radiographers (2009), page 3

6.2.3 Mentorship and Training - Preparedness

It is believed that many consultant radiographers might have come into post without adequate preparation for the research core domain. The trainee posts are a logical way of supporting the expert clinical leaders within the radiography profession, affording incumbents the potential to become consultant practitioners. Enhancing skills in research and leadership is certainly needed and this would:

“... aid in the confidence of new post-holders and help reduce feelings of isolation and potential vulnerability.”

Harris and Cornelius (2012), page 12

Field, McGuiness, Coates, et al. (2012) reported that the ratio of actual appointments to consultant radiographer posts is still *“disappointingly small”* (page 4) and this in part is owing to a lack of suitable candidates. They observed that although the main objective for establishing a consultant post is to improve patient outcomes, it is also an opportunity for career development.

Experiencing the Research Role of the Consultant Radiographer

Clearly, a transitional up-skilling period from advanced to consultant practitioners is required, as there will be knowledge and skills gaps between the levels of practice that need attention. Advanced practitioners:

“... undoubtedly demonstrate expert clinical skills; however experience within the leadership, education and research domains expected of a consultant may be limited.”

Field, McGuinness, Coates, et al. (2012), page 5

Non-medical consultants have previously been:

“... ‘launched’ into the new role without consideration of the potential challenges likely to be experienced.”

Field, McGuinness, Coates, et al. (2012), page 4

Snaith (2011) reflected that the gap between roles may be large and that:

“It is this gulf that many radiographers find difficulty in traversing and managers find challenging to understand the potential of the consultant role based on experience of advanced practice.”

Snaith (2011), page 6

Field, McGuinness, Coates, et al. (2012), as trainee consultants, felt the trainee receives mentorship which can highlight the specific areas where up-skilling is required. The clinical expertise part of the role should already be acknowledged. Therefore, training should focus on the other three domains and identify areas requiring development (Snaith, 2011).

The ‘*Scope of Radiographic Practice*’ Report (CoR, 2008) recommended that more radiographers should lead research in clinical areas, as this would improve not only

Experiencing the Research Role of the Consultant Radiographer

patient outcomes but strengthen the future of the profession. The report stated that it is imperative for education providers to review learning programmes so that the workforce is prepared to take on these duties.

Lack of suitable training and access to it, CPD and postgraduate education, including issues of transferring module credits, and funding to attend training, have been reported as barriers to up-skilling (CoR, 2008; Williams & Widdison, 2012).

The College of Radiographers document *‘Implementing Radiography Career Progression: Guidance for Managers’* (CoR, 2005a) discussed the central requirement for guidance and support in the first few months of a new or different type of role as:

“The acquisition of audit and research skills must now be recognised as an essential part of professional development and practitioners who feel that their knowledge and skills are lacking in this area should be encouraged to address this.”

College of Radiographers (2005c), page 10

Nightingale and Hardy (2012) observed that:

“Despite a political and professional desire to progress consultant practice, non-medical consultant roles across the UK have been adopted very slowly and in some areas, not at all.”

Nightingale and Hardy (2012), page 5

They concluded that the principal reasons for the lack of adoption of such roles are primarily *“a lack of role clarity and personal preparedness for the role”* (page 5).

Experiencing the Research Role of the Consultant Radiographer

Transition roles would allow for benefits and pitfalls to be assessed so that appropriate aid can be implemented. A period of preceptorship would enable an opportunity for strengthening skills and networks; as current trainees have remarked they had underestimated the requirements of a consultant post, although the training programme had given them confidence and empowerment (Nightingale & Hardy, 2012).

6.2.4 Accreditation

Posts have often been developed opportunistically, leading to local service adaptability of roles and 'in-house' acquisition of skills. This might cause transferability issues, as standards might not be recognised across centres; therefore, failure to have standardised accreditation will be a barrier to overall role development (Kelly et al., 2008).

As noted by Snaith (2011):

“A concern of many within the profession is the longevity of the consultant role, particularly where posts have been developed around individuals. Transferability of skills and successful appointment to vacant posts are required to demonstrate success of the post and the place it has within the local health economy.”

Snaith (2011), page 8

Field, McGuinness, Coates, et al. (2012) noted that there might have been a failure to appoint consultant posts owing to a shortage of suitable candidates who can demonstrate proficiency in all four core domains. In addition, they stressed that currently there is no national framework of support for those aspiring to the role.

Experiencing the Research Role of the Consultant Radiographer

They believed that accreditation of advanced and consultant practitioners would assist in developing portfolios of evidence regarding proficiency.

Standardised accreditation and transferability of skills across consultant radiographer roles would:

“... serve to clarify the education and training required of individuals aspiring to consultant level, thereby dispelling any lack of understanding of the calibre of the individual who has achieved accreditation”

Kelly (2010), page 94

In Wales there has been slow development of the consultant radiographer role and to date only one ‘*Heath Inspectorate Wales*’ accredited consultant has been appointed (Rees, 2012). Interestingly, in Wales the consultant title is protected, all non-medical consultant practitioners are subject to a process of scrutiny and only those approved can use the title. This is quite different in England, where the unprotected title might allow disparity.

Without rigorous criteria, are such consultant posts being diluted? Consultant practitioners should be at the top of the professional ‘ladder’ and thus great expectation should be placed on their levels of ability. White and McKay (2004) believed that if practitioners claim to be specialists then they should be working within “*a robust model*” of assessment, which ensures these individuals have both attained and are maintaining an agreed level of competency. Indeed, an individual who can attain all these criteria will be quite rare - and should that not be the case? Surely, if these individuals are at the pinnacle of their professions then their numbers would be quite low.

Experiencing the Research Role of the Consultant Radiographer

Significantly, White and McKay (2004) discussed cost implications between medical and consultant practitioners and that management will need to justify such roles.

Woodford (2006) observed that radiographers in consultant roles might be subject to more scrutiny and audit of practice than their medical colleagues. Perhaps this could be the case, but as a profession should this be a concern, or rather should radiographers seize such opportunities to demonstrate the excellence of their practice?

The Australian Inter-Professional Advisory Team (IPAT) '*Advanced Practice in Radiography and Radiation Therapy*' Report (2012) recommended a form of accreditation to ensure uniformity within such roles. One aspect of the formal route they suggested is that the post holder conducts a major postgraduate piece of research. The report also discussed maintenance and revalidation of status to retain it.

The Royal College of Radiologists and Society and College of Radiographers joint document on '*Team Working within Clinical Imaging*' (RCR & SCoR, 2007) stressed the need for good education and training of practitioners, but warned this will have resource implications. It also advocated the requirement for practitioner accreditation as this will ensure:

"... national consistency to national standards so facilitating transferability across the UK."

RCR and SCoR (2007), page 10

Experiencing the Research Role of the Consultant Radiographer

In addition, the document discussed the importance of annual personal development reviews (PDRs) for staff, as this will assist with the identification of training needs. Managers should ensure that targets are set within PDRs which cover the four core domains and ensure levels of competency are assessed.

Under the SCoR accreditation system, applicants will be expected to match each of the four core domains and will have to apply for reaccreditation over two yearly cycles to maintain the level of the four core domains (CoR, 2010a).

The updated 2012 joint Royal College of Radiologists and Society and College of Radiographers '*Team Working in Clinical Imaging*' (RCR & SCoR, 2012) emphasised the importance of accreditation, as this will help ensure we have high-quality practitioners. It clarified that currently consultant radiographer accreditation is voluntary and not mandatory, but stressed that both colleges strongly recommend employers have this expectation of their staff.

6.2.5 **Master's/Doctoral Level Training**

Not all those in the study had the recommended minimum Master's level requirement. Many had a lack of research experience or training; this finding is corroborated by the nurse consultant studies by Woodward, Webb and Prowse (2005 and 2006). It is considered that these factors would affect both the amount and level of research undertaken as part of the four core domains. Those with limited research knowledge and experience would be less capable and less confident of fulfilling the research core domain of their role (Woodward, Webb, & Prowse, 2005);

Experiencing the Research Role of the Consultant Radiographer

therefore, recommended minimum levels of education and preparedness for the role are essential. This level of education and preparedness needs to be acknowledged, not only by the new and existing post holders, but by line management and peers. Several of the respondents in the studies by Woodward, Webb and Prowse (2005 and 2006) were in the process of undertaking a Master's degree, and one who was struggling particularly with the role was not registered on a Master's degree programme. They found that some of their respondents did not have other expertise, such as leadership or teaching skills and thus many were acting as a clinical nurse specialist rather than at consultant nurse level.

Manning and Bentley's (2003) guest editorial in *Radiography* created much debate and controversy across the profession when they proposed the need for consultant radiographers to hold a Doctoral degree and suggested Master's level qualifications are:

"... insufficient preparation (training) for the requirements of many core functions of a consultant ... accepting anything less than doctorate level, radiography would again be perceived as a lightweight in the heavyweight ring."
Manning and Bentley (2003), page 5

Price and Edwards (2008) argued that a Doctoral level qualification is unnecessary, and is a step too far for clinical staff with other valuable skill sets. As such, they feel this expectation might be a reason for the low numbers aspiring to consultant level. Hardy and Snaith (2007) disagreed and asserted that although Master's level will provide a degree of research education, professional leaders in the field require Doctoral level education.

Experiencing the Research Role of the Consultant Radiographer

The results of the questionnaire phase indicate that even those with Master's level qualifications rated their own research ability as 'low' and were not actively presenting and publishing.

Ford (2010a) believed Doctoral qualification status is well founded, but considered whether this has made service managers believe these posts are more about academic rather than clinical skills. He stressed that ultimately consultant radiographer positions will be established by service managers, and so there is a need for them to understand and embrace the four core domains, including research.

Manley's (1997) review of nurse consultant roles highlighted the obligation to prepare future consultant nurses as both educators and researchers, and proposed that the academic preparation for the role is vital if research activity is to be achieved. She stated the need for a minimum of Master's Level, but felt Doctoral level would provide more confidence in leading research. Lee, Gambling and Hogg (2004) discussed the potential of the professional doctorate in integrating research into practice, as per:

“Academic and clinical radiographers are being required to engage in research activity that has value to practice. With suitable research training but without adequate training in leadership research activity may fail to flourish ... The professional doctorate offers one potential means to integrate ... with application to the clinical setting.”

Lee, Gambling and Hogg (2004), page 72

At the time of conducting the questionnaire none of the respondents had a Doctoral qualification, although two commented that they were working towards this standard. A number of those currently in post do not have a Master's qualification or equivalent

Experiencing the Research Role of the Consultant Radiographer

and this appears to be disadvantageous if they are to be confidently expected to lead the integration of research into practice. However, is Doctoral level too high an expectation of clinical staff? Perhaps again, reflection on the four core domains and their raison d'être is needed; as these posts are meant to form the foundation for the very highest standards within the profession. As noted by the College of Radiographers (CoR, 2010a):

“The SCoR believes that the educational requirements to support this highest level of clinical practice are education and/or development through workplace and other learning and practice that is equivalent to doctoral level.”

College of Radiographers (2010a), page 23

Notwithstanding Price and Edwards' (2008) view that a Doctoral level qualification was unnecessary; the professional body perspective seems more in line with that of Manning and Bentley (2003). However, and possibly for pragmatic reasons, the professional body stance leaves open the question of whether a Doctoral level qualification is required for consultant practice, whilst stressing the need for development equivalent to that level.

6.2.6 Building on the Professional Body of Knowledge

The results indicate a lack of publication by consultant radiographers, and therefore minimal input into the professional body of knowledge. As noted by Manning and Bentley (2003):

Experiencing the Research Role of the Consultant Radiographer

“Research skills are needed in professional practice because radiography must not continue to be simply an uncritical consumer of research but needs to generate and evolve its knowledge base.”

Manning and Bentley (2003), page 4

Affiliation to an HEI would be beneficial in supporting research to be undertaken which is relevant to clinical practice. Joint contract roles are currently not the norm in radiography and require further investigation.

Clearly, education programs are required to continually up-skill all practitioners. In particular, consultant practitioners must feel confident to question critically so they have the skills to both present and publish, and thereby contribute to the professional knowledge base (CoR, 2010a, 2013). Confidence and rating of own research ability was generally low at the questionnaire phase of this study. Currently, even if research is being undertaken, often the results of the work are not disseminated. For a few, the link between research and improvements in patient care was unclear, but as Kelly, Piper and Nightingale (2008) noted:

“Research deficits may well restrict career progression and therefore the chance to improve services.”

Kelly, Piper and Nightingale (2008), page e75

A key consideration Price and Le Masurier (2007) highlighted was that the radiographic disciplines match the career pathway opportunities of other AHPs; otherwise there is a risk of recruitment and retention becoming significant professional issues. Furthermore, they noted that owing to role boundary blurring, radiographic education must be responsive to changing clinical demands. Cowling

Experiencing the Research Role of the Consultant Radiographer

(2008) also stressed that “*education is often the key to any role progression*” (page e29).

This study confirms that several in the role do not appear to be educationally prepared for the core domain of research.

6.3 **SYNTHESIS OF THE LITERATURE**

The consultant radiographer numbers are still low and the proportion of consultant practitioners relative to the size of the whole profession is very small. This makes it unlikely that they alone will be able to create significant change if the overall culture of the profession continues not to value and accept research. However, the:

“... consultant radiographer role has inherent responsibilities to develop the profession and this is a considerable expectation on a group of 62 diagnostic and nine therapeutic radiographers.”

Harris and Cornelius (2012), page 10

Woodward, Webb and Prowse (2006) commented that consultant nurses who felt supported by their organisation had made advances in the other core domains, and that they had the opportunity of autonomy and flexibility within their role. They observed a lack of understanding of the role by peers and other staff and reflected that this will have an impact on working relationships and achievability within the role. A key point they also made was some of the nurse consultants interviewed had been able to set up support posts, which provided an infrastructure. Therefore they contended that support roles and facilities should be considered by organisations, as

Experiencing the Research Role of the Consultant Radiographer

this can help with the output of the consultant practitioner. Currently, such support appears to be minimal for radiographers.

Overall, Woodward, Webb and Prowse (2006) suggested that nurse consultant roles are “*complex, demanding and evolving*” (page 279) and that achievement within them is affected by several influences, many of which are outside the control of the post holder. This is an aspect corroborated by this study, which has shown that there are both individual and organisational factors which can hinder or facilitate the research core domain.

Graham (2007) maintained that organisations need to show they value such consultant roles by allowing individuals to have genuine autonomy. He contended that the success in these posts requires high quality supervisors who can support and develop the successful consultant. He advised consultants to have short, medium, and long-term goals so that outcomes can be realised. Both Graham (2007) and Woodward, Webb and Prowse (2005) reflected that the research component of the role is the easiest to drop, and so there is a necessity to evaluate the research activity within the role.

A key finding of the College of Radiographers’ *‘An evaluation of the impact of implementation of consultant practitioners in clinical imaging’* (CoR, 2010b) was the need for greater clarity in role development and future direction and, in addition, the requirement for more guidance on implementing such posts.

Experiencing the Research Role of the Consultant Radiographer

McSherry, Mudd and Campbell (2007) asserted that an individual's *"ability and creativity [will be key] in resolving workload issues"* (page 2073), hence the necessity for the 'leadership' core domain. As noted by the Centre for Workforce Intelligence (CfWI), the four core domains are intertwined as:

"Effective clinical leadership is one of the key enablers to harness the potential of the AHP workforce, as leadership is required to drive collaboration, research, evidence-based diagnosis, treatment and care."

CfWI (2013), page 9

The overall success of such roles will be in ensuring a defined career structure and opportunities for staff who remain in clinical practice, so that they can improve services to patients (McSherry, et al., 2007). An *'evaluation strategy'* is an absolute requirement for the success of the role from the outset, to measure outcomes at an organisational, professional and individual level (McSherry, et al., 2007). Currently, there is a lack of hard data demonstrating the substantive cost/benefit impact of consultant radiographer roles and this needs to be addressed (CoR, 2010b).

Bull's (2003) controversial paper proposed that those in specialist roles are leaving more mundane work to others and this has created friction in the workplace culture. The article contended that certain hospitals may not want, or even need, to employ a consultant practitioner, owing to financial and training constraints, and therefore it should not be assumed that such roles will help resolve recruitment and retention issues. However, Edwards (2010) argued that clinical departments that employ consultant radiographers demonstrate they are "forward thinking, open to change, and better at multidisciplinary team working", and so in the future will find it easier to recruit and retain staff.

Experiencing the Research Role of the Consultant Radiographer

It is essential to raise awareness of these roles within the profession. Consultant radiographers could help facilitate this by further disseminating their work and engaging others with it; thereby ensuring a more receptive and supportive organisational culture (McSherry, et al., 2007).

The paper by Pager, Holden and Golenko (2012) noted that AHPs are more likely to be motivated to do research owing to intrinsic factors such as a strong interest in this core domain. The extrinsic barriers to research most reported were workload and the lack of time available. They noted a requirement for increased research skills training, a supportive infrastructure, and 'quarantined' time.

The original '*Advance Letter*' (DH, 2001) stated a minimum of 50% clinical aspect of consultant roles, but no recommendations were advised for the other three domains. Particularly in radiography, this appears to be creating issues for those in-post who are doing high levels of clinical work. Lack of time available and clinical workloads were recorded as the biggest inhibitors to research occurring at both the questionnaire and interview stages. However, others did mention a 'perceived lack of time' and that "*with an intelligent overview*" (interview 22) the barriers to research could be overcome.

Woodward, Webb and Prowse (2005) discussed the concept of integrating the four core domains. They noted that the level of integration varied and that those who felt they had not integrated the four core domains were less able to see how these aspects could be related to the overall demands of the post. They believed that those who were unable to fulfil all aspects of their role were more likely to be in a

Experiencing the Research Role of the Consultant Radiographer

'clinical specialist' role. They considered that many of those who were involved with more than one domain appeared to practice them in isolation, and as separate activities to clinical work rather than integrating all four core domains together.

This study corroborates these findings, as many consultant radiographers appear to struggle linking the domains and regard them as separate entities.

Woodward, Webb and Prowse (2005 and 2006) observed that nurse consultants were often challenged by excessive clinical workload and an ambiguous role definition. However, as nurse consultants developed in their roles they tended to be more confident in the other domains.

In this study, as consultant radiographers developed into their roles the four core domains were still not always achieved. A difference between consultant nurse and consultant radiographer roles appears to be the amount of clinical involvement. Woodward Webb and Prowse (2005) reported nurse consultants as actually having less than 50% minimum clinical weighting defined by the '*Advance Letter*' (DH, 2001).

The Scottish Government document on '*Professionalism in Nursing, Midwifery and the Allied Health Professions in Scotland*' (Scottish Government, 2012) highlighted how traditional and conventional healthcare workforce boundaries have changed, requiring reassessment of professional roles. Furthermore, the new Department of Health document '*The Education Outcomes Framework*' (DH, 2013) expects a "*flexible workforce receptive to research and innovation*".

6.4 **SUMMARY OF CHAPTER**

The second literature review allowed the results and interpretations from this investigation to be compared to the current literature, to look for comparisons with other AHPs and nursing, and to highlight areas where the radiographic disciplines were different.

The main issues raised are:

- 'Negotiating an NHS reality' is difficult for all health professionals, but the clinical workload of those consultant practitioners meeting imaging demands is particularly high.
- The growth of consultant radiographer posts has been disproportionate in one discipline, breast imaging. The roles in breast imaging have developed differently to that of the other consultant radiographers' roles, and some in breast imaging roles are doing 100% clinical and no research. It is also the case that some in breast imaging roles have largely ignored the '*Advance Letter*' (DH, 2001) requirements and professional body (CoR, 2013) expectations in practice; even to the point of including these requirements in job descriptions, but ignoring these in job plans and execution into practice of the job description.
- There is a lack of succession planning for consultant practitioners in radiography. Since the start of this study, four consultant radiographers have left post and have not been replaced.

Experiencing the Research Role of the Consultant Radiographer

- Trainee consultant posts in radiography have been reported as successful and have given those with potential the time to be up-skilled and gain confidence in the four core domains.
- Accreditation is needed to ensure standardisation of roles and regular assessment of the four core domains.
- The Master's/Doctoral level debate continues. The demand in nursing is for a higher minimum qualification for consultant practitioners than exists for radiography.
- There is a lack of linking and collaborating with HEIs in radiography, as opposed to those in the nursing profession, where nearly all consultant nurses have such affiliation.

CHAPTER 7

SUMMARY OF WORK UNDERTAKEN AND KEY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION TO CHAPTER

This final chapter provides a summary of the work undertaken and reflects on the key findings from the study.

The chapter concludes with recommendations for practice and the need for further investigation within the topic area.

7.2 SUMMARY OF WORK UNDERTAKEN

The study produced a range of information regarding the research core domain of consultant radiographers.

Grounded theory was employed as this afforded the opportunity for individuals to be both heard and to reflect on their own practice. Individual 'journeys' have been travelled and the grounded theory approach has given an insight into the reality of being a consultant radiographer, whilst trying to achieve the research core domain that is integral to the role.

Experiencing the Research Role of the Consultant Radiographer

A combination of approaches was used to triangulate the data gathered and to strengthen its interpretation.

7.2.1 **The Literature Review**

A comprehensive literature review was undertaken, not only of consultant radiography practice, but also focusing on the role across other AHPs and nursing.

The literature review provided comparisons with other studies, and in addition revealed certain issues which appear more applicable or even unique to radiography. In particular:

- The high demand for imaging and more efficient cancer diagnosis and treatment delivery have been significant drivers for implementing consultant radiographer posts.
- The clinical domain takes a significantly higher proportion of time in a week than the minimum 50% recommended in the '*Advance Letter*' (DH, 2001), and appears a much higher share than the clinical allocation documented by other AHP and nursing consultant practitioners.
- The traditional hierarchies of medical influence in radiography can be either significant drivers or blockers to the research aspect of radiographers' roles.
- A lack of clear succession planning for consultant radiographer roles exists.
- The minimum academic qualification for consultant radiographers appears to be at a lower level than that recorded by other AHP and nursing consultants.

Experiencing the Research Role of the Consultant Radiographer

- There is a lack of research collaboration in radiography, both between clinical centres and between clinical and academic institutions.
- There is a need for accreditation of consultant radiographer roles to enable standardisation of posts and ensure regular evaluation.

7.2.2 **Study Execution**

An electronic questionnaire was sent to all consultant radiographers on The Society and College of Radiographers database. Fifty responded within the allocated timeframe, which equated to an 82% response rate (n=61).

The questionnaire phase of this project provided an overview of background information about consultant radiographers and gave foundation to the interview phase.

All consultant radiographers were invited to the face-to-face interview phase. Twenty five accepted. This equates to 38% of those in-post at that time (n=66).

The interviews gave the 'voice' of the consultant radiographers to the project, an opportunity to understand how individuals in these roles feel, and to 'experience' the challenges and concerns they face.

7.3 **KEY FINDINGS**

The aim of this study was to explore what the core domain of research means to consultant radiographers in clinical practice and to identify the key factors that facilitate or hinder research activity by this staff group.

Key findings from the study can be grouped into three core categories as follows:

Capacity

- The Role – many of the interviewees cited excessive clinical work and lack of autonomy as factors causing the greatest barriers to undertaking the research core domain. Nearly half the number of questionnaire respondents felt research should not be a core domain.
- Lack of Time – job plans and protected time for research appeared to be in short supply. A lack of specified or protected research time was an issue for 61% of the questionnaire respondents.

Organisational Structure

- Research Collaboration – only a few of the interviewees appeared to have research partnerships with academia.
- Support – many of the interviewees felt there was a lack of management and organisational understanding of the consultant radiographer role, and the reasoning for evidence based practice, and therefore a lack of protected time for this aspect of the role

Experiencing the Research Role of the Consultant Radiographer

- Research Culture – weak departmental research cultures were often mentioned, with 37% of the questionnaire respondents rating this as ‘poor’.
- Professional Issues – many of the interviewees felt there was inadequate succession planning and preparation for the role, and described problems with traditional boundaries of practice.

Capability

- Qualifications and Research Training – many felt they did not have the confidence and ability to both undertake and lead research. Not all consultant radiographers possessed a Master’s degree.
- An Understanding of Research – a need was identified by many of the interviewees to both demystify research and relate research to clinical work. Nearly a third of questionnaire respondents rated their research ability as ‘low’.
- Research Activity – reported activity was low regarding dissemination of results and publication records. Only 15% of the questionnaire respondents were currently engaged as research leads and 68% had never published.
- ‘Fears and Feelings’ about the overall role – ‘lonely’ and ‘isolated’ were used in most interviews to describe consultant radiographers’ feelings.

The main barriers to research were: ‘lack of allocated time’; ‘lack of skills/experience’; and ‘clinical workload’. The main facilitators recorded were: ‘time’; ‘skills and knowledge of the researcher’; and ‘a well defined research question’.

Experiencing the Research Role of the Consultant Radiographer

This study proposed a conceptual framework which suggests the required changes to current practice that would aid in the research core domain. These are:

- Understanding of roles by management
- Goals and outcomes - regularly evaluated
- Job plans with integration of core domains
- A degree of standardisation of roles
- Succession planning built-in to posts
- Mentorship and training - preparedness
- Accreditation
- Master's/Doctoral level training
- Trainee/preceptorship posts
- Joint contracts/collaboration with HEIs
- Increase in publication and presentation rates

7.4 **RECOMMENDATIONS**

This study proposed a conceptual framework of the barriers and facilitators to consultant radiographers undertaking the research core domain and, from the framework, proposed outcomes to support successful incorporation of the research domain into consultant radiographers' roles. The following recommendations arise from the proposed outcomes.

To increase 'Capacity' there is a need for:

1. *Understanding of roles by management.* It emerges that many of the interviewees felt that their departmental managers did not understand, or even see the relevance of, the research core domain in consultant radiographer roles.

Experiencing the Research Role of the Consultant Radiographer

2. *Goals and outcomes - regularly evaluated.* Goals should be set within personal development reviews (PDRs) that include all four core domains. Targets related to the research core domain should include publication and presentation expectations.
3. *Job plans with integration of core domains.* Job plans with allocated time for research activity in a working week would ensure that the research core domain was part of everyday practice, and an integral and accepted part of the role.

The Society and College of Radiographers may be able to assist with the above three points by guiding managers in the development of such posts and helping to ensure the four core domains are integrated into job descriptions; with an expectation that these will be assessed and evaluated, and that a distinction is made between consultant and advanced practitioners. For example, template job descriptions could be developed and a list of expert interviewers provided.

To ensure a more integrated 'Organisational Structure' there is a need for:

4. *A degree of standardisation of roles.* Although the disciplines within the radiography profession are diverse there should not be such diversity in the implementation of the four core domains in consultant practice. More defined allocations for all four core domains need to be clarified, as currently it is only the 'clinical expert' domain that has a specified minimum time allocation.

Experiencing the Research Role of the Consultant Radiographer

5. *Succession planning built-in to posts.* Succession planning needs to be addressed so that posts are not lost that would enhance effective and efficient service delivery.
6. *Mentorship and training – preparedness.* Newly appointed consultant radiographers may benefit from a research mentor, to provide advice and support in research. If this mentor was from the higher education sector this may also aid in facilitating future research collaborations between clinical and academic institutions.
7. *Accreditation.* As the title ‘consultant radiographer’ is not Health and Care Professions Council (HCPC) protected, then professional body standardised accreditation of the role is recommended by The Society and College of Radiographers. While this is voluntary, it needs to be encouraged very strongly by both employers and the Society and College of Radiographers, and needs to be re-evaluated regularly to ensure a set standard is both attained and maintained across the profession.

To increase ‘Capability’ there is a need for:

8. *Master’s/Doctoral level training.* Prior to appointment to a consultant radiographer post, at least a Master’s level qualification should have been attained.
9. *Trainee/preceptorship posts.* Consultant radiographer trainee and preceptorship posts should be supported as these would provide opportunities to up-skill, especially in research. Research skills should be obtained prior to

Experiencing the Research Role of the Consultant Radiographer

substantive appointment to a consultant radiographer post, thereby building the confidence of post holders in undertaking research activity.

10. *Joint contracts/collaboration with HEIs.* Research links between higher education institutions (HEIs) and clinical practice are required urgently to ensure that collaborative research undertaken is of current and needed clinical relevance. Radiographic research must support evidenced based care and ensure it is strategic and progressive. Individuals in post need to forge partnerships with their local education providers and this should be a target within individual PDRs.

11. *Increase in publication and presentation rates.* Training courses on how to write for publication need to be accessed and undertaking such a course should be part of individual's PDR.

For consultant radiography practice to fulfil the ambition of the government when it introduced AHP consultant roles and the ambition of the radiography profession specifically, further development and exploration is needed. The recommendations above, together with the conceptual framework developed during this study, should assist in achieving this end.

Further research required:

Following on from this study further research and follow-up work is required.

1. There is a need to explore the differences between radiotherapy and oncology and breast imaging consultant practitioner roles; to determine why they have been implemented in practice so differently.

Experiencing the Research Role of the Consultant Radiographer

2. Testing out of the conceptual framework and outcomes – probably across two groups of practitioners. Firstly, to see if it can be applied to support those who are doing little research and if it assists them to grow their research role. Secondly, to test it out in departments wanting to implement consultant practitioner roles.
3. A follow-up study to evaluate change in research capacity and capability.

7.5 **CONCLUSION**

Research is one of the four core domains of consultant allied health professional and nursing roles but, as yet, it is not fully embedded into those of all consultant radiographers. Many consultant radiographers appear to spend more of their time on the 'clinical expert' element of their role at the expense of the research domain. Results indicate there are variations across clinical specialties as to the amount and level of research undertaken by consultant radiographers.

This research identified factors, from the consultant radiographers' perspective, that both support and hinder research and suggests that, with 'an intelligent overview', some of barriers could be overcome. This study concludes that there is an urgent need for consultant radiographers to understand why research is one of the four core domains and to recognise the need to embed research into their clinical practice.

CHAPTER 8

REFERENCES

- ACORRN. (2007). Gap analysis of role definition and training needs for therapeutic research radiographers in the UK. *The British Journal of Radiology*, 80, 693-701.
- Adler, P., & Alder, P. (1987). *Membership roles in field research*. London: Sage.
- Adrian-Harris, D. (2006). Is radiography still an emerging profession? *Imaging and Oncology*, 46-49.
- Ahonen, S., & Liikanen, E. (2010). Radiographers' preconditions for evidence-based radiography. *Radiography*, 16(3), 217-222.
- Backman, K., & Kyngas, H. (1999). Challenges of the grounded theory approach to a novice researcher. *Nursing and Health Sciences*, 1(3), 147-153.
- Bailey, K. (1978). *Methods of Social Research*. New York: Free Press.
- Baker, C., Wuest, J., & Noerager Stern, P. (1992). Method slurring: the grounded theory phenomenology example. *Journal of Advanced Nursing*, 17, 1355-1360.
- Blumer, H. (1969). *Symbolic Interactionism*. Englewood Cliffs, NJ: Prentice Hall.
- Bolderston, A. (2005). Advanced practice issues for radiation therapists in the province of Ontario: a case study. *Can J Med Radiat Technol*, 26(2), 5-14.
- Bowen, G. A. (2008). Naturalistic inquiry and the saturation concept: a research note. *Qualitative Research*, 8(1), 137-152.
- Boyes, C. (2004). Discourse Analysis and personal/professional development. *Radiography*, 10, 109-117.
- Bryar, R., Cross, S., Baum, G., & al. (2003). The Yorkshire BARRIERS project: diagnostic analysis of barriers to research utilisation. *International Journal of Nursing Studies*, 40, 73-85.
- Bull, S. (2003). Skill mix in radiography. *Synergy*, September, 7-11.
- Burgess, R. (1984). *In the Field: An Introduction to Field Research*. London: Allen and Urwin.
- Burnard, P. (1991). A method of analysing interview transcripts in qualitative research. *Nurse Education Today*, 11, 461-466.
- Burton, C., Bennett, B., & Gibbon, B. (2009). Embedding nursing and therapy consultancy: the case of stroke consultants. *Journal of Clinical Nursing*, 18(2), 246-254.
- CfWI. (2013). *Making the most of Allied Health Professionals*. London: CfWI
- Challen, V., Kaminski, S., & Harris, P. (1996). Research-mindedness in the radiography profession. *Radiography*, 2(2), 139-151.
- Charmaz, K. (2004). Premises, Principles, and Practices in Qualitative Research: Revisiting the Foundations. *Qual Health Res*, 14, 976-993.
- Charmaz, K. (2006). *Constructing Grounded Theory: a practical guide through qualitative analysis*. London: Sage.
- Chiovitti, R., & Piran, N. (2003). Rigour and grounded theory research. *Journal of Advanced Nursing*, 44(4), 427-435.

Experiencing the Research Role of the Consultant Radiographer

- Clarke, A. (2003). Situation analyses: grounded theory mapping after the post modern turn. *Symbolic Interaction*, 26, 553- 576.
- CoR. (1994). *A Strategy for Research*. London: CoR.
- CoR. (2002). *Career Progression Framework*. London: CoR.
- CoR. (2003). *Developing the Business Case for Consultant Radiographers*. London: CoR.
- CoR. (2005a). *A Framework for Professional Leadership in Clinical Imaging and Radiotherapy and Oncology Services*. London: CoR.
- CoR. (2005b). *Implementing Radiography Career Progression: Guidance for Managers*. London: CoR.
- CoR. (2005c). *Research and the Radiography Profession: A Strategy and Five Year Plan*. London: CoR.
- CoR. (2005d). *A Strategy for Practice Development in Radiography*. London: CoR.
- CoR. (2008). *Scope of Radiographic Practice 2008: A report compiled by the University of Hertfordshire in collaboration with the Institute for Employment Studies for the Society and College of Radiographers*. London: CoR.
- CoR. (2009). *Consultant Radiographers: Succession Planning*. London: CoR.
- CoR. (2010a). *Education and Professional Development Strategy: New Directions*. London: CoR.
- CoR. (2010b). *Report to the College of Radiographers: An evaluation of the impact of implementation of consultant practitioners in clinical imaging*. By Dr Richard Price, University of Hertfordshire and Dr Linda Miller, Institute for Employment Studies. London: CoR.
- CoR. (2010c). *Research and the Radiography Profession: A Strategy for Research 2010 - 2015*. London: CoR.
- CoR. (2013). *Education and Career Framework for the Radiography Workforce*. London: CoR.
- Cowling, C. (2008). A global overview of the changing roles of radiographers. *Radiography*, 14, e28-e32.
- Cutcliffe, J. (2005). Methodological issues in nursing research: Adapt or adopt: developing and transgressing the methodological boundaries of grounded theory. *Journal of Advanced Nursing*, 51(4), 421-428.
- Denzin, N., & Lincoln, Y. (1994). *Handbook of Qualitative Research*. London: Sage.
- DH. (1991). *Supporting Research and Development in the NHS*. London: HMSO.
- DH. (2000a). *Meeting the Challenge: A Strategy for the Allied Health Professions*. London: HMSO.
- DH. (2000b). *The NHS Plan*. London HMSO.
- DH. (2001). *Advance Letter PAM (PTA) 2/2001*. London: HMSO.
- DH. (2003). *Radiography Skills Mix. A report on the four-tier service delivery model*. London: HMSO.
- DH. (2005). *Research Governance Framework for Health and Social Care*. London: HMSO.
- DH. (2006). *Best Research for Best Health*. London: HMSO.
- DH. (2012). *Developing the Role of the Clinical Academic Researcher in the Nursing, Midwifery and Allied Health Professions*. London.: HMSO.
- DH. (2013). *The Education Outcomes Framework*. London: HMSO.
- Dey, I. (1999). *Grounding grounded theory*. San Diego: Academic Press.

Experiencing the Research Role of the Consultant Radiographer

- Drennan, V., & Goodman, C. (2011). Sustaining innovation in the health care workforce: a case study of community nurse consultant posts in England. *BMC Health Services Research*, 11(200), 1-10.
- Edwards, H. (2010). Radiographers are ready to be consulted; a response to Ford's editorial. *Radiography*, 16(2), 168.
- Elliott, V., Wilson, S., Svensson, J., & Brennan, P. (2009). Research utilisation in sonographic practice: Attitudes and barriers. *Radiography*, 15(3), 187-195.
- Field, L., McGuinness, A., Coates, A., Yunis, S., & Clarke, R. (2012). All roads lead to Rome. *Synergy Imaging and Therapy Practice*, November, 4-5.
- Ford, P. (2010a). Consultant radiographers – Does the profession want them? *Radiography*, 16(1), 5-7.
- Ford, P. (2010b). The role of the consultant radiographer – Experience of appointees. *Radiography*, 16(3), 189-197.
- Frankfort-Nachmias, C., & Nachmias, D. (1992). *Research Methods in the Social Sciences*. New York: St Martins Press.
- Funk, S. G., Champagne, M. T., Wiese, R. A., & Tornquist, E. M. (1991). Barriers to using research findings in practice: The clinician's perspective. *Applied Nursing Research*, 4(2), 90-95.
- Gambling, T., Brown, P., & Hogg, P. (2003). Research in our practice—a requirement not an option: discussion paper. *Radiography*, 9(1), 71-76.
- Gerrish, K., Guillaume, L., Kirshbaum, M., Mc Donnell, A., Nolan, M., Read, S., & Tod, A. (2007). *Empowering frontline staff to deliver evidence-based care*. Sheffield: Sheffield Hallam University.
- Glaser, B. (1992). *Basics of Grounded Theory Analysis: Emergence vs Forcing*. Mill Valley, CA: The Sociology Press.
- Glaser, B. (2001). *The Grounded Theory Perspective: Conceptualisation Contrasted with Description*. Mill Valley, Chicago: Sociology Press.
- Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory: strategies for qualitative research*. Chicago: Aldine Press.
- Goulding, C. (2005). A comparative analysis of three qualitative strategies for marketing research. *European Journal of Marketing*, 39(3/4), 294-308.
- Graham, I. (2007). Consultant nurse-consultant physician: a new partnership for patient-centred care? *Journal of Clinical Nursing*, 16(10), 1809-1817.
- Grønhaug, K., & Olson, O. (1999). Action research and knowledge creation: merits and challenges. *Qualitative Market Research: An International Journal*, 2(1), 6-14.
- Hafslund, B., Clare, J., Graverholt, B., & Nortvedt, M. (2008). Evidence-based radiography. *Radiography*, 14(4), 343-348.
- Hall, W. A., & Callery, P. (2001). Enhancing the Rigour of Grounded Theory: Incorporating Reflexivity and Relationality. *Qualitative Health Research*, 11(2), 257-272.
- Hardy, M., & Snaith, B. (2006). Role extension and role advancement – Is there a difference? A discussion paper. *Radiography*, 12(4), 327-331.
- Hardy, M., & Snaith, B. (2007). How to achieve consultant practitioner status: A discussion paper. *Radiography*, 13(4), 265-270.
- Harper, D., & Thompson, A. R. (Eds.). (2012). *Qualitative Research Methods in Mental Health and Psychotherapy: A Guide for Students and Practitioners* (First ed.): John Wiley and Sons Ltd.

Experiencing the Research Role of the Consultant Radiographer

- Harris, R. (2000). Find and deliver: research and practice in therapeutic radiography. *Radiography*, 6(4), 225-226.
- Harris, R., & Beardmore, C. (2009). The research agenda and the role of the therapeutic radiographer: The College of Radiographers perspective. *Journal of Radiotherapy in Practice*, 8(2).
- Harris, R., & Cornelius, N. (2012). Consultant Radiographers - taking the radiographic profession to the future? *Synergy Imaging and Therapy Practice*, October, 10-12.
- Hogg, P. (2011). Transformational leadership in changing a research culture. *Synergy: Imaging and Therapy Practice*, April, 14-18.
- Hogg, P., Eaton, C., Robinson, L., Mackay, S., Seddon, D., Mellson, J., Murphy, F., Szczepura, K.; & Nightingale, J. (2011). Factors affecting the selection of foci for radiography research. *Synergy: Imaging and Therapy Practice*, June, 20-22.
- Hogg, P., Hogg, D., & Henwood, S. (2008). Consultant radiographer leadership – A discussion. *Radiography*, 14, e39-e45.
- Humphreys, A., Johnson, S., Richardson, J., Stenhouse, E., & Watkins, M. (2007). A systematic review and meta-synthesis: evaluating the effectiveness of nurse, midwife/allied health professional consultants. *Journal of Clinical Nursing*, 16(10), 1792-1808.
- IPAT. (2012). *Advanced Practice in Radiography and Radiation Therapy: Report from the Inter-Professional Advisory Team*. Sydney: IPAT.
- Jackson, C. (2007). Modernisation and healthcare careers - help or hindrance? *Imaging and Oncology*, 24-29.
- Jinks, A., & Chalder, G. (2007). Consensus and diversity: an action research study designed to analyse the roles of a group of mental health consultant nurses. *Journal of Clinical Nursing*, 16(7), 1323-1332.
- Kelly, J. (2010). Establishing consultant practice. *Radiography*, 16(2), 93-94.
- Kelly, J., Piper, K., & Nightingale, J. (2008). Factors influencing the development and implementation of advanced and consultant radiographer practice – A review of the literature. *Radiography*, 14, e71-e78.
- Koch, T. (1994). Establishing rigour in qualitative research: the decision trail. *Journal of Advanced Nursing*, 19, 976-986.
- Kvale, S. (1995). The social construction of validity. *Qualitative Inquiry*, 1(1), 275-289.
- Law, R. (2006). Consultant radiographic practice: impacts on service delivery and patient management. *Imaging and Oncology*, 28-32.
- Lee, N. J., Gambling, T. G., & Hogg, P. (2004). Leadership in research. *Radiography*, 10(1), 69-73.
- Lizarondo, L., Grimmer-Somers, K., & Kumar, S. (2011). A systematic review of the individual determinants of research evidence use in allied health. *Journal of Multidisciplinary Healthcare*, 4, 261-272.
- Manley, K. (1997). A conceptual framework for advanced practice: an action research project operationalizing an advanced practitioner/consultant nurse role. *Journal of Clinical Nursing*, 6(3), 179-190.
- Manning, D., & Bentley, H. B. (2003). The consultant radiographer and a Doctorate degree. *Radiography*, 9(1), 3-5.
- May, T. (1997). *Social Research: issues, methods, progress*. Buckingham: Open University Press.

Experiencing the Research Role of the Consultant Radiographer

- McCaughan, D., Thompson, C., Cullum, N., Sheldon, T., & Thompson, D. (2002). Acute care nurses' perceptions of barriers to using research information in clinical decision making. *Journal of Advanced Nursing*, 39, 46-60.
- McSherry, R., Mudd, D., & Campbell, S. (2007). Evaluating the perceived role of the nurse consultant through the lived experience of healthcare professionals. *Journal of Clinical Nursing*, 16(11), 2066-2080.
- Migration Advisory Committee. (2012). *Shortage Occupation List (SOL): Healthcare Profession Submission*. London: MAC.
- Miller, L., Price, R., & Vosper, M. (2011). Training and development for radiographers' extended roles: a case of *ad hoc* implementation. *Health Services Management Research*, 24, 60-68.
- Milner, M., Estabrooks, C., & Humphrey, C. (2005). Clinical nurse educators as agents for change: increasing research utilisation. *International Journal of Nursing Studies*, 42, 899-914.
- Morse, J., & Field, P. (1996). *Nursing Research - the application of qualitative approaches*. London: Stanley Thornes Ltd.
- Needle, J., Petchey, R., Benson, J., Scriven, A., Lawrenson, J., & Hilari, K. (2011). *The role of allied health professions in health promotion*. London: NIHR Service Delivery and Organisation Programme.
- Nickerson, C., & Cush, S. (2004). *New ways of working in the NHS Breast Screening Programme: second report on implementation*: NHS Cancer Screening Programmes.
- Nightingale, J., & Hardy, M. (2012). *Facilitating the transition to Non-Medical Consultant practice: a longitudinal evaluation*: University of Salford and University of Bradford.
- NHS Staff Council. *The NHS Terms and Conditions of Service Handbook Pay Circular (AfC) 2/2011*. London: NHS SC.
- NIHR. (2007). *Research in the NHS - HR Good Practice Resource Pack*.
- Nixon, S. (2001). Professionalism in radiography. *Radiography*, 7(1), 31-35.
- Ottenbacher, K. (1990). Occupational therapy curricula and practice-skill based or knowledge based? *Occupational Therapy Journal of Research*, 10, 7-11.
- Pager, S., Holden, L., & Golenko, X. (2012). Motivators, enablers, and barriers to building allied health research capacity. *Journal of Multidisciplinary Healthcare*, 5, 53-59.
- Paterson, A. (2009). Consultant radiographers – The point of no return? *Radiography*, 15(1), 2-5.
- Patton, M. (1990). *Qualitative Evaluation and Research Methods*. London: Sage.
- Price, R. (1994). Focus on research training. *Radiography Today* (October Edition).
- Price, R. (2012). Editorial: All together now? *Radiography* 18, 229.
- Price, R., & Edwards, H. (2008). Harnessing competence and confidence: dimensions in education and development for advanced and consultant practice. *Radiography*, 14 (Suppl, 1), e65-e70.
- Price, R., & Le Masurier, S. (2007). Longitudinal changes in extended roles in radiography: A new perspective. *Radiography*, 13(1), 18-29.
- Price, R., & Paterson, A. (2002). Consultant practitioners in radiography - a discussion paper. *Radiography*, 14, e61-e64.
- RCR. (2002). *Clinical Radiology: a workforce in crisis*. London: RCR.
- RCR, & SCoR. (2007). *Team Working within Clinical Imaging: A contemporary view of skills mix*. London: RCR and SCoR.

Experiencing the Research Role of the Consultant Radiographer

- RCR, & SCoR. (2012). *Team Working in Clinical Imaging*. London: RCR and SCoR.
- Rees, Z. (2012). Consultant radiographers: The Welsh perspective. *Synergy Imaging and Therapy Practice*, December, 4-7.
- Reeves, P. (2008). Research in medical imaging and the role of the consultant radiographer: A discussion. *Radiography*, 14, e61-e64.
- Retsas, A. (2000). Barriers to using research evidence in nursing practice. *Journal of Advanced Nursing*, 31(3), 599-606.
- Riemer, J. (1977). Varieties of opportunistic research. *Urban Life*, 5, 467-477.
- Ritzer, G., & Goodman, D. (2004). *Classical Sociological Theory*. Boston: McGraw Hill.
- Rolfe, G. (1996). Going to extremes: action research, grounded practice and the theory-practice gap in nursing. *Journal of Advanced Nursing*, 24, 1315-1320.
- Saldana, J. (2009). *The Coding Manual for Qualitative Researchers*. London: Sage.
- Scottish Government. (2010). *Consultant Nurses, Midwives and Allied Health Professionals (NMAHPs): guidance for NHS Boards*. Edinburgh: Scottish Government.
- Scottish Government. (2012). *Professionalism in Nursing, Midwifery and the Allied Health Professions in Scotland: a report to the coordinating Council for the NMAHP contribution to the health care quality strategy for NHS Scotland*. Edinburgh: Scottish Government.
- Sim, J., & Radloff, A. (2009). Profession and professionalisation in medical radiation science as an emergent profession. *Radiography*, 15(3), 203-208.
- Skills for Health. (2011). *Draft for Discussion: Nationally Transferable Roles Template - Career Framework Level 8: Non Medical Consultant Practitioner*. London: HMSO.
- Slevin, E., & Sines, D. (2000). Enhancing the truthfulness, consistency and transferability of a qualitative study: utilising a manifold of approaches. *Nursing research*, 7, 79-98.
- Snaith, B. (2011). Developing radiography leadership: trainee consultant roles. *Synergy Imaging and Therapy Practice*, January, 6-8.
- Snaith, B. (2012). Collaboration in radiography: a bibliometric analysis. *Radiography*, 18(4), 270-274.
- Snaith, B., & Hardy, M. (2007). How to achieve advanced practitioner status: A discussion paper. *Radiography*, 13(2), 142-146.
- Strauss, A., & Corbin, J. (1990). *Basics of Qualitative Research*. London: Sage.
- Touati, N., Roberge, D., Denis, J.-L., Cazale, L., Pineault, R., & Tremblay, D. (2006). Clinical leaders at the forefront of change in health-care systems: advantages and issues. Lessons learned from the evaluation of the implementation of an integrated oncological services network. *Health Services Management Research*, 19(2), 105-122.
- Turnpenney, J. (2003). *Consultant AHP Audit*. Leeds: NHS Modernisation Agency Leadership Centre.
- Upton, D., & Upton, P. (2006). Knowledge and use of evidence-based practice by allied health and health science professionals in the United Kingdom. *Journal of Allied Health*, 35, 127-133.
- White, P., & McKay, J. C. (2004). The Specialist Radiographer—does the role justify the title? *Radiography*, 10(3), 217-227.
- Williams, C. (2012). Attitudes to and perceptions of research for health science lecturers. *Radiography*, 19(1), 56-61.

Experiencing the Research Role of the Consultant Radiographer

- Williams, P. (2002). Research, Radiography and the RAE: Lessons from the 2001 Research Assessment Exercise. *Radiography*, 8(4), 195-200.
- Williams, S., & Widdison, S. (2012). Survey of consultant radiographers current position regarding CPD. Unpublished report.
- Winch, S., Henderson, A., & Creedy, D. (2005). Read, Think, Do!: a method for fitting research evidence into practice. *Journal of Advanced Nursing*, 50(1), 20-26.
- Woodford, A. J. (2006). An investigation of the impact/potential impact of a four-tier profession on the practice of radiography – A literature review. *Radiography*, 12(4), 318-326.
- Woodward, V., Webb, C., & Prowse, M. (2005). Nurse consultants: their characteristics and achievements. *Journal of Clinical Nursing*, 14(7), 845-854.
- Woodward, V., Webb, C., & Prowse, M. (2006). Nurse consultants: organizational influences on role achievement. *Journal of Clinical Nursing*, 15(3), 272-280.
- Wylie, D., & Gallagher, H. (2009). Transformational leadership behaviours in allied health professions. *Journal of Allied Health*, 38(2), 65-73.
- Yielder, J., & Davis, M. (2009). Where radiographers fear to tread: Resistance and apathy in radiography practice. *Radiography*, 15(4), 345-350.

Experiencing the Research Role of the Consultant Radiographer

CHAPTER 9

BIBLIOGRAPHY

- Ackermann, F., & Eden, C. (2011). Strategic Management of Stakeholders: Theory and Practice. *Long Range Planning*, 44, 179-196.
- Adair, J. (1993). *Effective Leadership, how to develop leadership skills*. London: How to books.
- Adams, J., & Smith, T. (2003). Qualitative methods in radiography research: a proposed framework. *Radiography*, 9(3), 193-199.
- Agar, M., & MacDonald, J. (1995). Focus groups and ethnography. *Human Organisation*, 54, 78-86.
- Albrecht, S., & Andreetta, M. (2011). The influence of empowering leadership, empowerment and engagement on affective commitment and turnover intentions in community health service workers: Test of a model. *Leadership in Health Services*, 24(3), 228-237.
- Alimo-Metcalfe, B., & Alban-Metcalfe, R. (2000). Heaven can wait. *Health Services Journal*, 11, 26-29.
- Alimo-Metcalfe, B., & Alban-Metcalfe, R. (2001). The development of a new transformational leadership questionnaire. *Journal of Occupational and Organizational Psychology*, 74(1), 1-23.
- Axelsson, R. (1998). Towards an evidence based health care management. *International Journal of Health Planning and Management*, 13(4), 307-317.
- Bass, B. (1985). *Leadership and Performance Beyond Expectations*. New York: Free Press.
- Bennett, A., & Richie, K. (1975). *Questionnaires in Medicine*. Oxford: Oxford Press.
- Bolden, R., Gosling, J., Marturano, A., & Dennison, P. (2003). *A review of leadership theory and competency frameworks; edited Version of a Report for Chase Consulting and the Management Standards Centre*. Exeter University.
- Boud, D., Keogh, R., & Walker, D. (1995). *Reflection: Turning Experience into Learning*. London: Kogan Page.
- Brealey, S. (2001). What is evidence based medicine? An emerging science not fashionable rhetoric. 7(1), 7-10.
- Brook, L. (1978). *Survey Research Practice*. London: Heinemann.
- Bruner, E. (1993). Introduction: The ethnographic self and the personal self. In P. Benson (Ed.), *Anthropology and Literature*. Chicago: University of Illinois Press.
- Buchanan, D., & Huczynski, A. (Eds.). (1997). *Organizational behaviour - an introductory text* (3rd ed.). London: Prentice Hall.
- Burns, J. (1978). *Leadership*. New York: Harper and Row.
- Buttress, S. J., & Marangon, T. (2008). Legal issues of extended practice: Where does the responsibility lie? *Radiography*, 14, e33-e38.
- Calman, K., & Hine, D. (1995). *A policy framework for commissioning cancer services*. London: HMSO.
- Cantin, P. (2008). Developing the role of the consultant sonographer. *Ultrasound* 15(3), 170-172.

Experiencing the Research Role of the Consultant Radiographer

- Carter, M., & Spink, J. (2001). Consuming the evidence: consumers and evidence-based medicine. *Med. J. Aust.*, 175(6), 316-319.
- Chalder, G., & Nolan, P. (2001). The role of the forensic consultant nurse observed. *British Journal of Forensic Practice*, 3, 23-30.
- Chummun, H., & Tiran, D. (2008). Increasing research evidence in practice: a possible role for the consultant nurse. *Journal of Nursing Management*, 16, 327-333.
- Clarke, L. (1992). Qualitative research: meaning and language. *Journal of Advanced Nursing*, 17, 243-252.
- Cohen, S. (2009). *Leader Development: Leading in Tough Times*. London: Right Management.
- CoR. (2002). *Statements of Professional Conduct*. London: CoR.
- CoR. (2002). *A Strategy for the Education and Professional Development of Radiographers*. London: CoR.
- CoR. (2003). *Education and Professional Development: Moving Ahead*. London: CoR.
- CoR. (2003). *Role Development Revisited: The Research Evidence*. London: CoR.
- CoR. (2005). *Medical Image Interpretation & Clinical Reporting by Non-Radiologists: The Role of the Radiographer*. London: CoR.
- CoR. (2008). *Learning and Development Framework for Clinical Imaging and Oncology*. London: CoR.
- CoR. (2009). *The ACORRN / SCoR Research Radiographer Starter Pack*. London: CoR.
- CoR. (2009). *Implementing the career framework in radiotherapy - policy into practice*. London: CoR.
- CoR. (2013). *Scope of Practice*. London: CoR.
- Cormack, D. (1984). *The Research Process in Nursing*. London: Blackwell.
- Cox, J., G.Halkett, Anderson, C., & Heard, R. (2010). A Delphi study on research priorities in radiation therapy: The Australian perspective. *Radiography*, 16(1), 26-39.
- Crosby, J. (1996). Learning in small groups. *AMEE Medical Education Guide*, 8, 189-202.
- Crow, R. (1982). How nursing and the community can benefit from nursing research. *International Journal of Nursing Studies*, 19, 37-45
- Davies, B., & Hughes, A. (1995). Clarification of advanced nursing practice, characteristics and competencies. *Clin Nurs Spec*, 9, 156-160.
- Decker, S., & Iphofen, R. (2005). Developing the profession of radiography: Making use of oral history. *Radiography*, 11(4), 262-271.
- Denzin, N. (1989). *The Research Act*. London: Prentice Hall.
- DH. (1993). *Research for Health - a research and development strategy*. London: HMSO.
- DH. (1997). *The New NHS: Modern and Dependable*. London: HMSO.
- DH. (1999). *Making a Difference - Strengthening the Nursing, Midwifery and Health Visitor Contribution to Health and Healthcare*. London: HMSO.
- DH. (2002). *Managing for Excellence in the NHS*. London: HMSO.
- DH. (2002). *Shifting the Balance of Power*. London: HMSO.
- DH. (2007). *Our NHS, our future, NHS next stage review interim report*. London: HMSO.

Experiencing the Research Role of the Consultant Radiographer

- DH. (2011). *National Allied Health Professional Leadership Challenge Toolkit*. London: HMSO.
- DH. (2011). *The New NHS Leadership Framework* London: HMSO.
- DH. (2012). *Academic Health Science Networks*. London: HMSO.
- Eddy, A. (2008). Advanced practice for therapy radiographers – A discussion paper. *Radiography*, 14(1), 24-31.
- Elliott, R., Fischer, C., & Rennie, D. (1999). Evolving guidelines for publication of qualitative research studies in psychology and related fields. *British Journal of Clinical Psychology* 38, 215-229.
- Fiedler, E. (1967). *A Theory of Leadership Effectiveness*. New York: McGraw-Hill.
- Field, P., & Morse, J. (1985). *Nursing Research: the application of qualitative approaches*. Chicago: Aspen Publishers.
- Fielden, S., Davidson, M., & Sutherland, V. (2009). Innovations in coaching and mentoring: implications for nurse leadership development. *Health Services Management Research*, 22(2), 92-99.
- Forsyth, L., & Maehle, V. (2010). Consultant radiographers: Profile of the first generation. *Radiography*, 16(4), 279-285.
- Gambling, T., Brown, P., & Hogg, P. (2003b). This is not the end, nor is it the beginning—but it is the end of the beginning—getting to grips with the research process. *Radiography*, 9(2), 161-167.
- Glaser, B. (1978). *Theoretical Sensitivity*. Mill Valley, CA: The Sociology Press.
- Grove, A. L., Meredith, J. O., MacIntyre, M., Angelis, J., & Neailey, K. (2010). UK health visiting: challenges faced during lean implementation. *Leadership in Health Services*, 23(3), 204-218.
- Hammick, M. (1995). Radiography research and the qualitative approach: A paradigm and a discourse. *Radiography*, 1(2), 135-143.
- Hannagan, T. (1995). *Management Concepts and Practices*. London: Pitman Publishing.
- Hansen, A. D. (2003). Education in groups: The path for improved clinical practise? A comparative study on benefits from preparatory education in radiation therapy measured before and after modified educational procedure. *EJC Supplements*, 1(5), S371.
- Harrington-Pollock, S. (2009). Radiography and Evidence-based practice: where's the evidence? Unpublished BSc (Hons) Diagnostic Radiography. Sheffield Hallam University.
- Haslam, S. A., & Ryan, M. K. (2008). The road to the glass cliff: Differences in the perceived suitability of men and women for leadership positions in succeeding and failing organizations. *The Leadership Quarterly*, 19, 530-546.
- Hersey, P., & Blanchard, K. (1977). *Management of Organizational Behaviour*. Englewood Cliffs, NJ: Prentice Hall.
- Hicks, C. (1996). A study of nurse's attitude to research: a factor analytic approach. *Journal of Advanced Nursing*, 23, 373-379.
- HIW: <http://www.hiw.org.uk/Documents/477/Guidance%20Notes%20for%20the%20development%20of%20Consultant%20Practitioners-e.pdf>. Guidance for the development of (non-medical) Consultant Practitioner Posts (September 2011). Retrieved 08/01/13
- Hogg, P., Hogg, D., & Brian Bentley, H. (2007). Leadership in the development of the radiographic profession. *Imaging and Oncology*, 54-60.

Experiencing the Research Role of the Consultant Radiographer

- Holmberg, R., Fridell, M., Arnesson, P., & Bäckvall, M. (2008). Leadership and implementation of evidence-based practices. *Leadership in Health Services*, 21(3), 168-184.
- Hunt, J. (1997). Towards evidence based practice. *Nursing Management*, 4(2), 14-17.
- Hutchinson, S. (1986). Grounded Theory: The Method. In P. Munhall & C. Oiler (Eds.), *Nursing Research: a qualitative perspective*. London: Appleton-Century-Crofts.
- Ingersoll, G. (2000). Evidence-based nursing: what it is and what it isn't. *Nursing Outlook*, 48, 151-152.
- Jasper, M., & Jumaa, M. (2005). *Effective Healthcare Leadership*. Oxford: Blackwell Publishing.
- Jones, H. C., & Robinson, L. (2008). A reflection on the role of an emergency care Consultant Radiographer in achieving appropriate imaging conditions for nasogastric tube positioning. *Radiography*, 14, e11-e14.
- Kellerman, B. (2008). *Followership: How followers are creating change and changing leaders*. Boston: Harvard Business Press.
- Kelly, J., Hogg, P., & Henwood, S. (2008). The role of a consultant breast radiographer: A description and a reflection. *Radiography*, 14, e2-e10.
- Kidd, P., & Parshall, M. (2000). Getting the Focus and the Group: Enhancing Analytical Rigor in Focus Group Research. *Qualitative Health Research*, 10(3), 293-308.
- Kitzinger, J. (1994). The methodology of focus groups: the importance of interaction between research and participants. *Sociology of Health and Illness*, 16(1), 103-121.
- Kolb, D. (1984). *Experiential Learning*. Englewood Cliffs, New Jersey: Prentice Hall.
- Kouzes, J., & Posner, B. (2002). *The leadership challenge 3rd edition*. San Francisco: Jossey-Bass.
- Kuhl, S., Schnelle, T., & Tillmann, F.-J. (2005). Lateral Leadership: An Organizational Approach to Change. *Journal of Change Management*, 5(2), 177-189.
- Kurmis, A. P. (2003). Contributing to research: the basic elements of a scientific manuscript. *Radiography*, 9(4), 277-282.
- Lee, H., & Cummings, G. (2008). Examining relationships between director leadership practices and manager worklife and burnout. *Journal of Leadership Studies*, 2(2), 47-62.
- Lewis, S. (1998). Some research possibilities in diagnostic radiography. *Radiography*, 4(3), 205-209.
- Lovegrove, M., & Long, P. (2012). Are radiographers prepared for the clinical leadership challenge? *Radiography*, 18(4), 230-231.
- Malamateniou, C. (2009). Radiography and research: a United Kingdom perspective. *European Journal of Radiography*, 1, 2-6.
- Manley, K. (2000). Organisation culture and consultant nurse outcomes. *Nursing Standard*, 14(37), 34-38.
- Marshall, G. (2005). Critiquing a research article. *Radiography*, 11(1), 55-59.
- Masterson, A., & Cameron, A. (2002). Consultant radiographers: fix or fudge? *Synergy August*, 25-27.
- Matthews, J. (2008). Putting followers first in the leadership process. *Journal of Leadership Studies*, 2(2), 100-102.

Experiencing the Research Role of the Consultant Radiographer

- McIntosh, J., & Tolson, D. (2009). Leadership as part of the nurse consultant role: banging the drum for patient care. *Journal of Clinical Nursing*, 18(2), 219-227.
- McKenna, G. (2010). Radiography and the REF. *Radiography*, 17(2), 92-93.
- Mullally, S. (2001). Leadership and politics. *Nursing Management*, 8(4), 21-27.
- Mullins, L. (Ed.). (2005). *Management and Organisational Behaviour* (7th ed.). Essex: Pearson Education Limited.
- Murphy, F. J., & Yelder, J. (2010). Establishing rigour in qualitative radiography research. *Radiography*, 16(1), 62-67.
- Naylor, S. (2011). Research ethics, not just a simple case of moral values. *Synergy: Imaging and Therapy Practice*, March, 4-6.
- Newman, K., Pyne, T., & Cowling, A. (1998). Managing evidence-based health care: a diagnostic framework. *Journal of Management in Medicine*, 12(3), 151-167.
- Ng, C., & White, P. (2005). Qualitative research design and approaches in radiography. *Radiography*, 11(3), 217-225.
- Nightingale, J. (2008). Developing protocols for advanced and consultant practice. *Radiography*, 14, e55-e60.
- Nightingale, J., & Hogg, P. (2003). Clinical practice at an advanced level: an introduction. *Radiography*, 9(1), 77-83.
- Nightingale, J., & Marshall, G. (2010). Citation analysis as a measure of the impact of research. *Radiography*, 18(2): 60-67
- Nixon, S. (1999). Undergraduate research: theory or practice? *Radiography*, 5(4), 237-249.
- Northouse, P. (2010). *Leadership: Theory and Practice* (5th ed.). London: Sage.
- Parkin, J. (1998). Evidence-based practice: the arguments for and against. *Nurs. Crit. Care*, 3(2), 67-72.
- Polit, D., & Hungler, B. (1991). *Nursing Research - principles and methods*. Philadelphia: Lippincott.
- Reeves, P., Wright, C., Shelley, S., & Williams, P. (2004). The Society of Radiographers' research strategy. *Radiography*, 10(3), 229-233.
- Routledge, J., Burns, M., Davidson, S. E., Johnson, K., Swindell, R., & Khoo, V. (2003). The emerging role of the cancer research nurse in promoting evidence based care in radiotherapy. *EJC Supplements*, 1(5), S346.
- Ryan, S., Hassell, A., Thwaites, C., Manley, K., & Home, D. (2006). Exploring the perceived role and impact of the nurse consultant. *Musculoskeletal Care*, 4(3), 167-173.
- Sackett, D., Rosenberg, W., & Gray, M. (1996). Evidence-based medicine: what it is and what it isn't - it's about integrating individual clinical expertise and the best external evidence. *BMJ*, 312, 71-72.
- Sandelowski, M. (1998). The call to experts in qualitative research. *Res Nurse Hlth*, 21, 467-471.
- Schein, E. (Ed.). (2010). *Organizational Culture and Leadership* (4th ed.). San Francisco: Jossey-Bass.
- Schroeder-Saulnier, D. (2009). *Employee Engagement: Leading the Way to an Engagement Culture*. London: Right Management.
- Seymour, B., Kinn, S., & Sutherland, N. (2003). Valuing both critical and creative thinking in clinical practice: narrowing the research-practice gap. *Journal of Advanced Nursing*, 42(3), 288-296.
- Silagy, C., & Haines, A. (1998). *Evidence based practice in primary care*. London: BMJ Books.

Experiencing the Research Role of the Consultant Radiographer

- Strack, J., Fottler, M., & Kilpatrick, A. (2008). The relationship of health-care managers' spirituality to their self-perceived leadership practices. *Health Services Management Research, 21*(4), 236-247.
- Taylor, M. (1998). Evidence-based practice: are dietitians willing and able? *Journal of Human Nutrition and Dietetics, 11*(6), 461-472.
- Telecom@SUNIT. (no date). TEL 598 Research Methods: Triangulation in Research. [Available at <http://www.tele.sunyit.edu/triangulation.htm>]. Retrieved 10/01/11
- Thompson, C., McCaughan, D., Cullum, N., & al, e. (2001). The accessibility of research-based knowledge for nurses in United Kingdom acute care settings. *Journal of Advanced Nursing, 36*, 11-22.
- Titchen, A., & Binnie, A. (1993). Research partnerships: collaborative action research in nursing. *Journal of Advanced Nursing, 18*, 858-865.
- United Kingdom Clinical Research Collaboration. (2007). *Developing the best research professionals - qualified graduate nurses recommendations for preparing and supporting clinical academic nurses of the future*. London: UKCRC.
- Vaz, F., & Small, S. (2007). The Lead Cancer Nurse – an ill-defined role? *Journal of Nursing Management, 15*(2), 149-154.
- Wales Public Service Management. (2011). *Becoming a Thought Leader*. Cardiff: Welsh Assembly Government.
- Walsh, N. A. (2010). Grounded theory for radiotherapy practitioners: Informing clinical practice. *Radiography, 16*(3), 244-247.
- Walton, H. (1997). Small group methods in medical teaching. *Medical Education, 31*, 459-464.
- Watson, C., & Hofman, I. (2004). The role of task-related behavior in the emergence of leaders. *Group and Organization Management, 2004*(29), 6.
- Wimpenny, P., & Gass, J. (2000). Interviewing in phenomenology and grounded theory: is there a difference? *Journal of Advanced Nursing, 31*(6), 1485-1492.