Research in action: the impact of a research placement on student nurses' use of evidence in clinical practice

“Research in Action: the impact of a research placement on student nurses’ use of evidence in clinical practice.”

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Catherine Lynch

Student number: 9868811

Abstract

Clinical research units have not traditionally been used as placement areas for student nurses. Despite a focus on evidence-based practice in the student nurse curriculum, the theory-practice gap continues to be well reported in the literature (Salifu et al., 2019) and has more recently been re-branded as the “research-practice” gap. This research study asked, “how does the experience of ‘research in action’ impact on student nurses’ engagement with research and enable their use of evidence to underpin clinical practice?”

A scoping review identified pockets of practice areas in the UK where placements in research units were being tested (Harrison, 2014; Naylor et al., 2014). Raising the profile of research across healthcare professions is a strategic priority for professional organisations, including universities, who are involved in healthcare delivery in the UK.

A placement in a clinical research unit for student nurses was created as part of a three-phase action research study; based on an adaptation of Crotty’s (1998) research design, using a multi-paradigm model of constructivism and critical realism. 12 students completed a two-week placement in the testing phase of the study. The placement design was revised, and eight students completed a four-week placement. Student participants kept diaries and were interviewed about the effect of the placement on assessment, engagement, and confidence with research.

The findings of this action research study show that student nurses benefited from an increased awareness of how research is carried out in the practice setting and improved their confidence in questioning in practice. They also benefited from being mentored by clinical research nurses with excellent communication skills. However, the existence of research units and the role of the clinical research nurse remains mostly covert. There is a suggestion that student nurses have an over-dependence on the internet for critical appraisal of evidence. Assessment of student nurses in practice needs to use the

vocabulary of research to enable student nurses to make the connection between research placement experience and achieving placement competencies.

Whilst the global pandemic limited this study to three action research cycles, the model allowed for a method of enquiry where change and improvement informed each successive phase of the study. The findings pointed to a lack of critical appraisal skills in student nurses however, exposure to a research environment increased engagement with the research process.

Acknowledgements

I would like to acknowledge all the student and mentor participants, without whom this study would not have been possible. I would also like to thank my two supervisors, Professor Heather Loveday and Dr Claire Anderson for the guidance and direction they provided throughout this journey. Their support and encouragement, especially through the difficult times over the past number of years, has helped me to stay motivated and focused on completion. I am very grateful to them both for their feedback on chapters as I progressed through the doctorate, to Heather for making sure I accurately addressed each stage of the research process correctly and in order, and to Claire for her forensic eye for detail. Your supervision has been invaluable.

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Chapter one – Introduction and background

1.0 Background to the study

The emergence over the past 30 years of qualitative data collection methods has driven nursing research through a deductive route, exploring perceptions, views, beliefs and feelings, an approach well supported in the literature in healthcare, (Miller, 2011) however, evaluating the impact of research on student nurses' application of evidence to practice remains a challenge, with more recent literature pointing to the continuance of the "research practice gap" (Leach and Tucker, 2018).

Health Education England (HEE) has explicitly endorsed the combined importance of research and education in their strategy for research and innovation (HEE, 2015). Whilst there have been strategies and policy documents which focus on the importance of research in practice in place since the early 2000's (Department of Health, (DH), 2006; Royal College of Nursing, (RCN), 2008), The NHS Constitution (DH, 2013) placed a firm focus on the need to develop a flexible workforce with capacity to respond to change, embrace research and innovation and adapt to the challenges of healthcare provision. *The Health and Social Care Act 2012*, and the subsequent mandate from the Government to Health Education England (April 2014 to March 2015) also clearly sets out a statutory responsibility on HEE to promote research. The Briggs Report (Department of Health and Social Security (DHSS), 1972) is credited with the early focus on research in nursing practice, with its recommendation that nursing should become a research based profession and this has been consistently built on and endorsed over the intervening years, culminating in the Nursing and Midwifery Council's (NMC) declaration that research needs to be at the core of student nurse training and at the centre of every registrant's professional practice (Nursing and Midwifery Council, 2018).

The National Institute for Health Research (NIHR) has stated explicitly that using research units for student placement is central to developing a workforce that is research aware and research ready (O'Neill, 2015). Designing a model for a placement with clinical research nurses is not new in the UK and whilst not widely used, there are pockets (Leicester and Liverpool) where the idea has been tried and tested (Harrison, 2014; Naylor et al., 2014).

Creating research awareness in undergraduate health education has been slowly emerging in the literature, perhaps in response to the NIHR's ongoing work to promote engagement with research as a core element of health curricula and healthcare organisations' inclusion of the value of research in strategic visions and plans (NHS England, 2017; Council of Deans of Health, 2018; NMC, 2018; NHS, 2019).

1.1 The emergence of the clinical research unit

Moule et al. (2017) provide a useful plot of the development of nursing research, starting with Florence Nightingale collecting data to find solutions to questions relating to morbidity and mortality during the Crimean War, whilst nursing research only started in earnest in the United Kingdom with the inception of the National Health Service in the 1940's. At that time, research into nursing practice was likely to be undertaken by sociologists and psychologists, with nursing research being the preserve of a very few, determined, individuals. A similar picture is painted in Tierney's (1998) early work on the development of research in nursing across Europe showing slow growth in research activity within the nursing profession, something attributed at the time to lack of resources, lack of awareness and lack of understanding of the research process.

In 2004, the UK Clinical Research Collaboration (UKCRC) was established to re-engineer the clinical research environment in the UK. It brought together a group of major stakeholders who influenced clinical research in the UK, including funding bodies, academics, the NHS, regulatory bodies, pharmaceutical organisations and patients. The UKCRC holds a register of Clinical Trials Units throughout the United Kingdom and supports initiatives to streamline the regulatory and governance environment in the UK. The National Institute for Health Research (NIHR), established in 2006, is the NHS organisation responsible for the provision of healthcare research, working across a UK wide group of Clinical Research Networks to provide the infrastructure to support high quality clinical research studies. The NIHR Clinical Research Network is committed to improving the quality and quantity of clinical research being undertaken in the United Kingdom, as well as improving the profile of clinical research within professional and public domains. Data published in 2019 (NIHR, 2019), shows a year-on-year increase in clinical research activity across the NHS in England.

1.2 The emergence of the clinical research nurse role

Since the early 2000's, there have been significant changes to the clinical research environment and an opportunity for all nurses to be involved in clinical research. Initially driven by the NIHR, the focus has been on the development of the role of the clinical research nurse and to increase the profile and uptake of clinical research work within the NHS (NIHR, 2017).Whilst there have been strategies and policy documents which focus on the importance of research in practice in place since the early 2000's (DH, 2005; RCN,

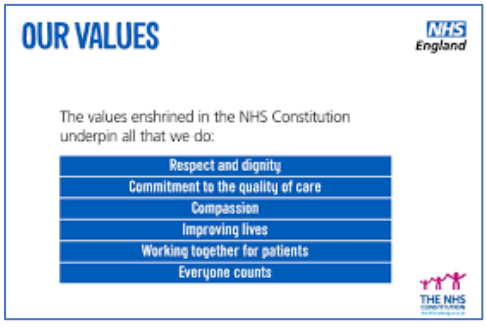


Figure 1: The NHS Constitution 2014

2008), The NHS Constitution (2013) placed a firm focus on the need to develop a flexible workforce with the capacity to respond to change, embrace research and innovation and adapt to the challenges of healthcare provision (Figure 1). Specialist professional groups, such as the RCN Research Society and its Clinical Research Nurses Sub-committee, emphasise the importance clinical research nurses play in delivering clinical research and ultimately improving patient care and treatment pathways.

Clinical research nurses develop specialist skills and knowledge through their involvement with clinical trials, supporting and recruiting patients, data collection and recording, managing a team, developing insights into the ethical dimensions of research, and understanding the principles of autonomy, advocacy and research governance. As autonomous practitioners, working within a team, they have the potential to provide student nurses with learning opportunities to see these skills and knowledge used in a more explicit way than students may see in a busy ward location. The one-to-one nature of their work gives students opportunities to observe the minutiae of how these skills and knowledge are used in practice. The opportunity to observe “research in action” gives students a unique learning opportunity to observe first-hand how patients are recruited to clinical trials and how their journey is then managed. Research in action, that is, watching the research process as it happens in the real world, would enable students to see the journey from the start of a clinical trial, through the consent process, clinic appointments, recording and storage of data, to the closing of a study. To create a generation and a workforce of research aware and research able healthcare practitioners, the use of the clinical research unit as a practice learning experience could create an opportunity to explore whether a student placement in this specialist area could possibly bridge the

evidence-practice gap. This has been particularly evident during the Covid 19 pandemic, where clinical research nurses were instrumental in progressing the RECOVERY Trial (Nuffield Department of Population Health, 2021). On the RECOVERY Trial website, one of the clinical research nurses involved in the trial describes her role as the team member who plays a vital role in crossing the divide between an incredibly diverse team, recruiting patients to clinical trials, explaining to doctors and nurses how to administer treatments, and making sure that data is collected and recorded properly. Teaching staff and students of all disciplines is a significant part of the clinical research nurses' role, so their skills in training and development are often more developed than those of many nurses who do not practice these skills on a regular basis (Hood et al., 2021; Ness, 2020).

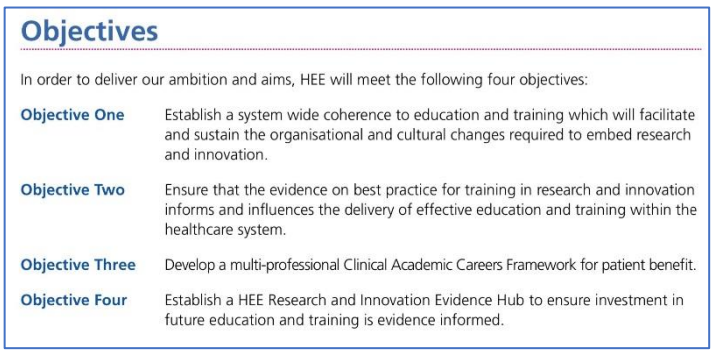
1.3 Further contextual considerations.

The launch of Leading Change, Adding Value (NHS England, 2016) provided a national framework for nursing, midwifery and care staff from the spring of 2016 to March 2019. The framework was made up of 10 aspirational commitments, the 7th of which was to lead and drive research, to evidence the impact of what nurses, midwives and care staff do. The publication of the Atlas of Shared Learning (NHS England, 2019) along with the adjoining Research Portfolio, showcases the work that has taken place across England and demonstrates the impact and contribution that clinical research nurses can make to health and social care in delivering the Long Term Plan (NHS, 2018).

The NIHR provides the framework through which the Department of Health can position, maintain and manage research staff and the research infrastructure of the NHS in England as a national research facility. The league table shows that the NHS

Trust where this research study took place has had a year on year increase in research study activity since 2015, with 95 studies ongoing in 2016/17 increasing to 101 in the year 2018/19. The Trust was rated 22nd in the league table for the number of recruited participants (2,152) in active studies in the year 2018/19.

HEE have responded to their statutory responsibility to promote research by leading the way in designing a plan that will develop a flexible workforce. The plan is supported with a research and innovation strategy; Developing a flexible workforce that embraces research and innovation, (HEE, 2015) and lays out four key objectives (Figure 2) all of which support embedding research in practice.



Objectives

In order to deliver our ambition and aims, HEE will meet the following four objectives:

Objective One	Establish a system wide coherence to education and training which will facilitate and sustain the organisational and cultural changes required to embed research and innovation.
Objective Two	Ensure that the evidence on best practice for training in research and innovation informs and influences the delivery of effective education and training within the healthcare system.
Objective Three	Develop a multi-professional Clinical Academic Careers Framework for patient benefit.
Objective Four	Establish a HEE Research and Innovation Evidence Hub to ensure investment in future education and training is evidence informed.

Figure 2: HEE's 4 key objectives.

The NIHR started work in 2014 to deliver the agenda with focus on the first two objectives and stated explicitly that using research units for student placement was central to developing a workforce that was research aware and research ready (O'Neill, 2015). There has been a substantial move within healthcare to raise the profile of research at a national level (HEE, 2014; NIHR, 2014; HEE, 2015; O'Neill, 2015; NIHR, 2017).

In her report following an investigation into nursing research structures and strategies, Whitehouse, (2018) a clinical research nurse, identified some positive working practices, some issues which needed addressing and gaps for future research and celebrations of excellence in practice. Interestingly, despite providing a detailed insight into the world of the clinical research nurse, there is no mention of student nurses either on placement with a research team or as an observer of the

clinical research role in a job shadow. This is suggestive of research units still being seen as distinct from general student placement pathways, despite the findings in her report which indicate a lack of both clarity and visibility in the role of the clinical research nurse. Equally, the NIHR believes that nursing education has been slow to respond to new opportunities to prepare nurses to deliver better care for patients though excellence in clinical research practice (O'Neill, 2015).

1.4 Researcher profile

I have been employed in education since 2000, where my first role was to deliver a module to pre-registration nursing students on evidence-based practice, a module with somewhat of a "poisoned chalice" reputation, due to the perceived dry nature of the content and a reputation amongst students as a module with very dull content. My challenge was to overturn this reputation and create educational material that was student friendly and engaging. My chosen approach was to use analogies; examples[1] from everyday living which students engage with and use these to explain the concepts of research design and methodology. An interest in evidence-based practice and research continued throughout my Master's degree where I undertook a primary research study, exploring how post registration nursing students engaged with e-learning. Subsequently I took on the role of course leader for a Master's programme in Advanced Practice and became a module leader for the dissertation of that programme. My supervision skills were developed through supervision of Masters students and I completed a post graduate certificate in research with the

[1] An example- a highly advertised face cream which claimed 97% of women who used it said it reduced fine lines and wrinkles. On examination of the data, students found the survey sample size was 14.

Joanna Briggs Institute training for systematic reviews in 2013, prior to registering for the Professional Doctorate in Nursing.

1.5 Research question and aims

The overarching aim of this study was to create a placement pathway in a clinical research unit, positioned within a large NHS Foundation Hospital Trust in the south of England, to improve student nurses' assessment of and engagement with research and develop their confidence to apply research in practice. A clinical research unit was used as a placement area for the first time for final year pre-registration nursing students, to understand the possible and potential impact such a placement might have on improving what has long been recognised as the theory practice gap in nursing education (Mabbett, 2013; Blackman and Giles, 2017). Both students and educators have recognised the disparity between the evidence taught in the classroom setting and the subsequent application of that evidence in practice (Seymour et al. 2003) however, despite a huge move in healthcare to become "evidence based", the theory practice gap continues to be well documented in the literature (Dariel et al., 2014; O'Gorman, 2014; Kellahear, 2014; Salifu et al., 2019) and has been further defined, perhaps more accurately, as the research practice gap (Lizarondo et al., 2011; Leach and Tucker, 2018). To create a generation and a workforce of research aware and research able healthcare practitioners, new educational initiatives are required. By exploring the use of the clinical research unit as a practice learning experience, an understanding of its impact and its effect, and the placement advantages and limitations, can help inform the undergraduate nursing curriculum design and the workforce planning agenda.

Study aim: To explore and investigate ways to increase research awareness in the pre-registration undergraduate or postgraduate student nurse programme by using a placement pathway in a clinical research unit.

Additionally, the study had sub-aims, which aimed to:

- Generate a body of evidence to support practice opportunities to enable students to engage with evidence-based practice and the research process.
- Provide a knowledge base which has the potential to influence curriculum development to improve the profile of clinical research.
- Create an evidence-based placement pathway to develop research competence in the undergraduate workforce through placement.

Considering the study aim and sub aims, the research question was finalised as:

"How does the experience of 'research in action' impact on student nurses' engagement with research and enable their use of evidence to underpin clinical practice?"

To enable the study to adequately answer this complex question, the question was broken down into sub questions which informed the design (action research) and the subsequent methodology. The study would need to consider:

- How does a learning experience in a clinical research unit prepare a student nurse in *assessing clinical research*?
- How does it affect their *engagement with research*?
- How does the learning experience give the student nurse *confidence to apply evidence to practice*?

1.6 Contribution to the field

The Research Excellence Framework (REF) first introduced in 2014, replacing the Research Assessment Exercise, is a UK wide impact evaluation, assessing research activity in British Higher Education Institutions. Its aims are to provide accountability for public investment in research, to provide benchmarking information and to ensure an efficient and equitable allocation of resources to support research activity (REF, 2019). In England, the REF is managed by Research England, a new council within UK Research and Innovation, which manages the £900 million UK Research Partnership Investment Fund and administers the UK Higher Education Innovation Fund. The University of West London's (UWL) strategic plan – Achievement 2023 (UWL, 2018) clearly set out the organisation's commitment to research, it prioritised the production of impactful research and pledged to place continued emphasis on UWL research strengths and inter-disciplinary research activity. The strategy set out its plans to offer a transformational experience to all students and aimed for a top 100 ranking in the Teaching Excellence Framework (TEF) 2021 and a Gold ranking (increasing from the current Silver ranking) by 2023. To achieve all these, research needed to be embedded and visible at every stage of the student experience and supported by staff who are research aware at minimum and research active at optimum. This study provided opportunity to explore and evaluate a placement pathway to contribute to this plan.

Whilst the NMC (2018) has clearly led the way in creating the standards for a new nursing curriculum, requiring high visibility of a research profile at every stage of the student nurse's experience, the Council of Deans of Health have a strong commitment to taking that agenda further across all health disciplines at every level. In their current strategic plan (Council of Deans of Health, 2018) they identified five

key portfolios, the second of which is research. They committed to fostering research networks, promoting clinical academic roles in nursing, midwifery and allied health professional and actively encouraging innovation in research (Council of Deans of Health, 2018). In May 2019, they published the findings of their survey study, “Becoming research confident”, which explored research in pre-registration curricula for nursing, midwifery and allied health programmes in the UK (Council of Deans of Health, 2019). They found significant variation in university approaches to pre-registration research exposure across the sector and indicated a need for more collaboration between higher education institutions and practice partners to provide more student “hands on” research experience. This study provided an opportunity to address the findings of the survey by developing pre-registration nursing students into professionals who not only appreciated the importance of research but who saw the career and developmental opportunities research presented. An experience of research in action would enable participants in this study to appreciate the importance of how evidence and research are embedded in practice and what mechanisms can be used to enable and enhance this. This study also endorsed the value of research units being used as placements for students and addressed the need for professional programmes and higher education institutions to provide opportunities for students to engage with hands on research activities and to appreciate the difference that research and evidence-based practice can make to patients. Finally, this study endorsed the Council of Deans of Health (2019) findings which emphasised the need to include research activity in clinical placements.

1.7 Overview of thesis.

This thesis is presented in nine chapters. This chapter has described the background to the study, drawing on emerging literature from higher education, and professional

bodies with a vested interest in student nurse education and workforce development. Chapter two presents the scoping review which was undertaken at the start of this study to scope the research and policy literature that informed the development of the research. It considers the national research policy which impacts on the study, the design of the placement for nursing students, it explores how healthcare professionals learn about and engage with research and it examines the role of the clinical research nurse.

Chapter three describes the chosen methodology for this study, introducing an adaptation of Crotty's (1998) research design framework and presents a multi-paradigm model of constructivism and critical realism as the theoretical perspective for the study. It explains why the study was based on an action research design and introduces Roland's 7I's conceptual framework, which was used to conceptualise the findings.

Chapters four, five and six present the findings of the three phases of the study; phase one – engaging with the field to create the student placement; phase two – the student evaluations, diaries and interviews and phase three – the mentor focus group.

The application of Roland's 7I's framework with an accompanying discussion is described in chapter seven. The chapter is structured using the seven domains described by Roland as a mechanism to enhance evaluation of an educational intervention and discusses the findings presented and analysed in the previous three chapters.

Chapter eight concludes the study with several recommendations for practice and for further research.

Chapter nine is offered as an addition chapter, it presents my reflections on the challenges and limitations of the study and also my personal reflections on the journey to complete a professional doctorate.

Chapter two – Literature review

2.0 Introduction

This chapter describes the scoping of the literature which underpins the research study. It briefly describes the scoping review approach and goes on to present the results of the searches. It provides a narrative analysis of the research and policy literature that informed the development of the research. The review is organised into three themes which were identified from a two-stage search. The chapter introduces the concept of *research in action*; the notion that a placement in a research unit may have an effect on student nurses' subsequent engagement with research, which had implications for the design of this study and the design of the student learning experience. Exploring learning theory and approaches to learning in practice provided an additional dimension to inform the study design. The chapter will conclude with the implications from the findings of the scoping review and the impact of the learning theory review on the philosophical underpinnings of the study, the choice of study design and the methodology, and will provide the context for the rationale, aim and objectives of the study.

2.1 Scoping review methodology

Scoping has been described as a novel methodology for systematically assessing the breadth of a body of literature in a research area (Levac et al., 2010). Mays et al. (2001) suggest scoping studies can be used to rapidly map the key concepts underpinning a research area and the main sources and types of evidence available, and are useful where an area is complex or has not been reviewed comprehensively before and where a gap in a knowledge base is identified (McGowan et al., 2020). Arksey and O'Malley (2005) indicate that a scoping review differs from a systematic

review in that it allows the researcher more scope with search terms and study selection at the outset, suggesting the process is not linear but iterative, requiring researchers to engage with each stage of the review process in a reflexive way, providing a comprehensive mapping of the literature, and relevant concepts and theories.

The York 5 stage scoping review framework (Figure 3) (Arskey and O'Malley, 2005) has been adapted (Levac et al., 2010; Colquhoun et al., 2014) to structure this study based on Munn et al.'s (2018) guidance on the appropriateness of scoping reviews over systematic reviews.

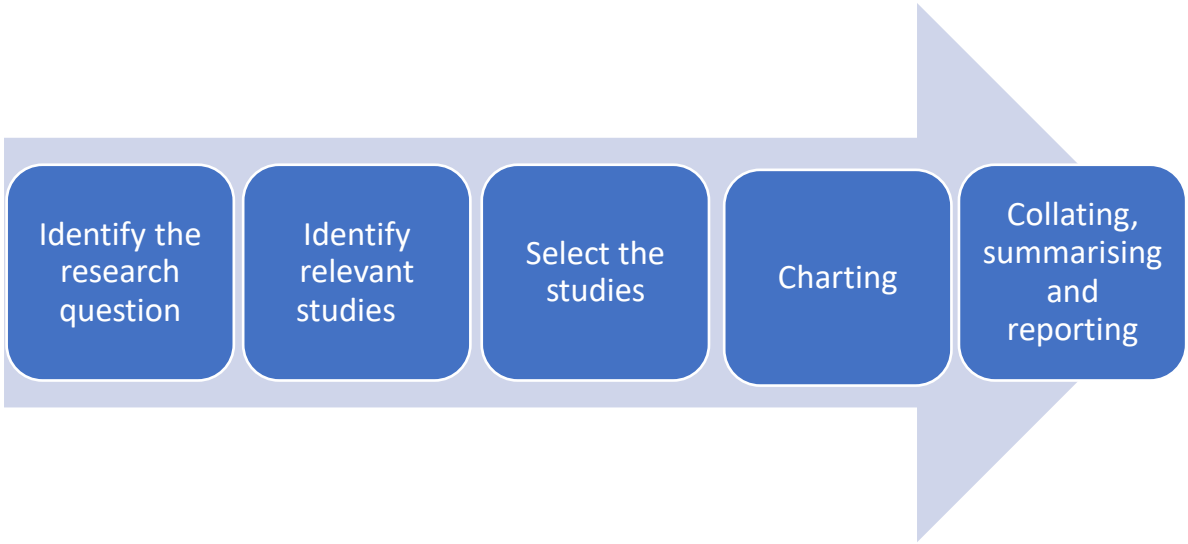


Figure 3: The five stages of a scoping review, adapted from Arskey and O'Malley (2005)

2.1.1 Scoping review stage one - Identifying the research question

The purpose of the scoping review was to establish what literature existed that would inform the development of the research study, identifying how student nurses gained experience of *research in action* during their clinical placements and what impact it had on their use of and perceptions of evidence for practice. Four questions guided the review to assess the quality and relevance of the literature:

- “What is known from the existing literature about student nurses on placement in a clinical research unit?”
- “What is known from existing literature about healthcare placements in clinical research units?”
- “What is the impact of placements in research units on research in action?”
- “What impact does a placement in a research unit have on student nurses?”

2.1.2 Scoping review stage two - Identification of relevant studies

A two-stage search strategy was used to search databases, reference lists, websites of professional organisations, research networks and grey literature. The first search was structured to extract literature that matched the research question exactly or had similar wording in the title or abstract. Keywords applied were nurs*, AND student* AND “research placement” OR “research unit placement” OR “Research in action” OR “Research utilization”. Databases searched in the first search were CINAHL, Academic Search Elite, Medline and NICE Evidence. No restriction was placed on language or geographical location at this stage of the initial search. Limiters were set to records published between 1st January 2000 and 31st December 2015. NICE Evidence, which did not respond to complex searches, was searched with the simple formula “research placement” OR “research unit placement” OR “research in action”. A total of 153 records were identified in the first search.

Search one					
Keywords		Records found	Records screened	Included in study after screening	
Nurs*					
And	Student*				
And	“research placement” OR “research unit placement” OR “research in action” OR “research utilization”	CINAHL: 56 Academic Search Elite: 36 Medline: 35 NICE evidence: 26	153 records were screened. CINAHL search identified five studies which were replicated in the Academic Search Elite search and the Medline Search. No records were included from the NICE Evidence search.	Five records were selected for inclusion in the study	Harrison (2014) A Harrison (2014) B Naylor (2014) Elsborg Foss et al. (2014) Lee (2011)

Table 1: Search one summary

Search two replicated search one, in each of four databases, with the addition of the keywords: “clinical research nurs*” OR “research nurs*” OR “specialty clinical area*” OR “attitudes to research” OR “attitudes towards research” OR “practice development” OR "research and development". An asterisk was added to the term “placement” and the search term “student*” was removed to widen the scope of the search and to focus on the placement. This search produced 14,317 records in CINAHL. A Subject major heading: “Education, nursing” was applied, along with a Geographical locator to include sources from New Zealand and Canada, USA and Europe. English was selected as the publication language. This reduced the search results to 505 sources. The same search terms were used to search Academic Search Elite, the initial search produced 3,849 records. A subject Thesaurus term “Nursing education” was applied and produced 94 records. The search was re-run in Medline and produced 17 results with a subject major heading of “education, nursing, continuing”, “research”, nursing staff, hospital” and “research” applied. This search produced 8 records. The search was run once more in NICE Evidence using the simple terms “clinical research nurse” or “attitudes to research” or “research and

development" and produced 51 results. The full electronic search history for all searches is in Appendix 1.

Search two					
Keywords		Records found	Records screened	Included in study after screening	
Nurs*					
And	"research placement*" OR "research unit placement*" OR "research in action" OR "research utilization" OR "clinical research nurs*" OR "research nurs*" OR "specialty clinical area*" OR "attitudes to research" OR "attitudes towards research" OR "practice development" OR "research and development"	CINAHL: 505 Academic search Elite: 94 Medline: 8 NICE evidence: 51	All 658 records were screened. No records were included from the NICE Evidence search.	12 records were selected for inclusion in the study	Green et al. (2017) Bird (2019) Carter (2019) Einarsen and Giske (2018) Coyne and Needham (2012) MacArthur (2014) Mortenius (2014) Rickard (2012) Spilsbury (2008) Ledger (2008) Ross and Burrell (2019) Whitehouse (2017)

Table 2: Search two summary

After the extensive searches described above, the next stage of the process examined the grey literature and searched the reference lists in the identified papers. This was done by going to individual websites of professional organisations (Figure 4) and by running general internet searches using the key words used in the first and second searches.

National Institute for Health Research – archive	Department of Health	The NMC
NHSI	ESRC	The RCN
Kings Fund	European Union Directives	Google
UK Center for inter professional education	Health Education England	Google Scholar
Council of Deans		

Figure 4: Organisations in grey literature search

This search produced the greatest volume of material, and whilst not research material, provided a useful context for why change is needed and what the professional bodies' views and aspirations were regarding improving the visibility of the research process and the role of the research nurse. The findings are summarised in an adapted PRISMA diagram (Figure 5).

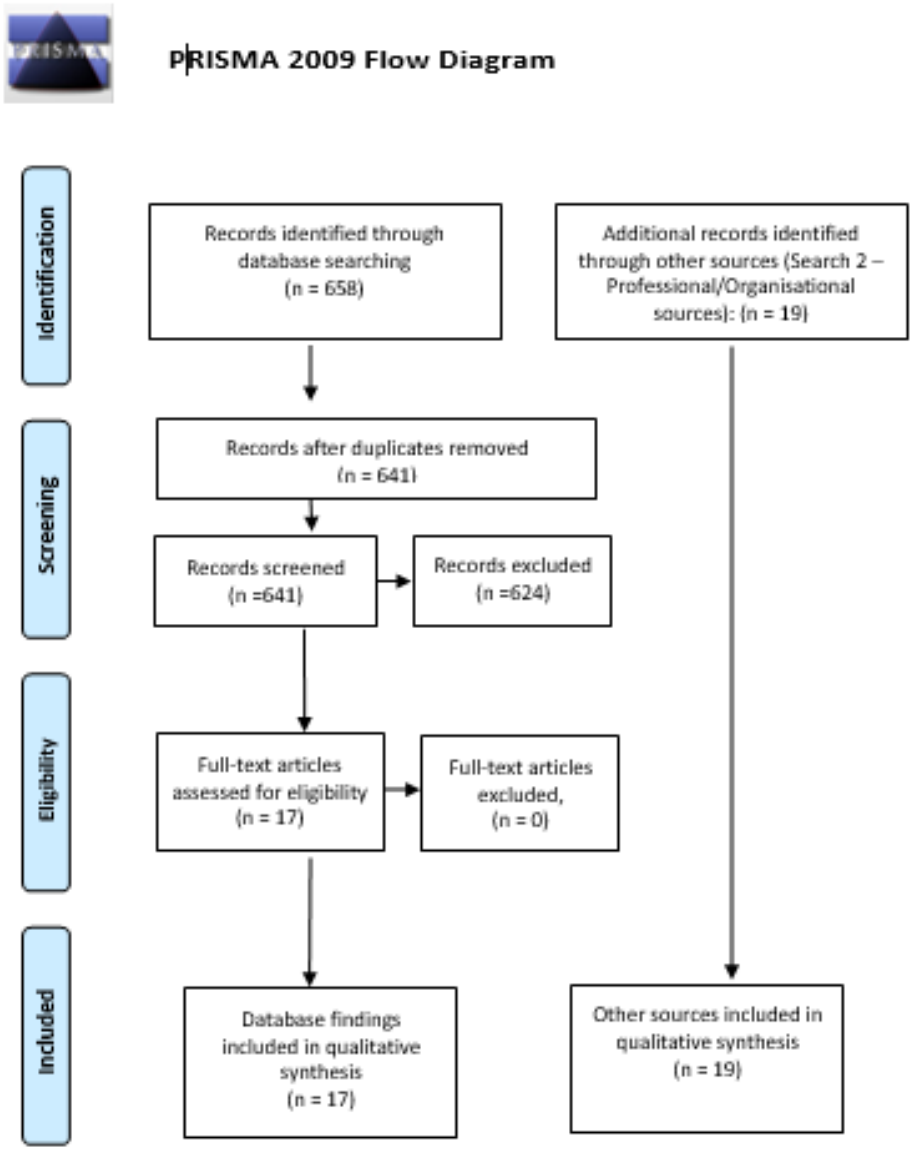


Figure 5: Adapted PRISMA Diagram of identified studies and sources

2.1.3 Scoping review stage three - Study selection

This stage of the scoping review used a broad range of criteria, without design or outcome stipulation, to identify the studies which were relevant to the review. Arskey and O'Malley (2005) acknowledge the need to make practical decisions regarding the coverage of a review, and guidance from the PRISMA ScR extension points to the need for identification of eligibility criteria and an associated rationale for their inclusion in the study. A set of criteria (inclusion and exclusion criteria) were identified for consideration and included:

Studies/papers which reported on:

- Student nurse placement in a clinical research unit
- Student nurses experience of placement in a clinical research unit
- Promoting research in clinical placements
- Clinical research nurses' careers
- Nurses' perception of research in action

Studies/papers which provided guidance on:

- Managing research placements in healthcare
- Legislation which refers to research governance
- Policy documents on managing research experience for students

Exclusion of studies/papers that were:

- Published before 2000 (due to changes in nursing education and the emergence of a strategic focus on research from UK professional bodies after that date).

- Conducted in environments where parallels to the UK system could not be established, for example, in the Middle East where the education of nurses differed greatly to that of the UK, (Cowman, 2014; Alhusaini et al., 2016).

Each of the 153 records identified in search one was scanned and five records were identified inclusion in the scoping review. The second, and more detailed search, involved screening a greater volume of records. Each of the 505 identified records during the CINAHL search was scanned and produced 12 records for inclusion in the review. The Academic Search Elite search produced 94 records. The title and abstract of each of these records was scanned and no additional sources were added to the review. Eight records were identified in the search of the Medline database, the titles and abstracts of which were scanned, and no new records were identified for inclusion in the review. The search of the NICE Evidence produced 51 records, none of which were identified for inclusion after screening. There was no change following a further review of the grey literature and each of the 17 sources identified in stage two of the review was included.

2.1.4 Scoping review stage four - Charting

Charting is a process of sifting through qualitative data using key themes and issues to synthesise and interpret reports. It creates the opportunity for a “narrative review” (Arskey and O’Malley, 2005) and provides the reader with an insight into the processes used and the outcome of each study (Pawson, 2002). Whilst some of the studies included have used a quantitative methodology, a narrative approach has been used to describe their findings. The use of the scoping study allowed for inclusion of a variety of literature – research studies which used quantitative and qualitative data, alongside commentaries and materials sourced through professional

body websites. Using a descriptive analytical method, charting was completed for the 17 selected studies (Appendix 2) with the application of a common analytical framework identifying:

- Author(s), and year of publication
- Study location
- Main subject
- Aims
- Methodology
- Results

Additionally, 19 sources of information (not research studies), identified through searching professional and government websites, were added to the chart, (Appendix 2) as advised in the guidance for the use of the PRISMA ScR extension, described by McGowan et al. (2020) as an approach which captures the main concepts, theories, sources and knowledge and gaps of the topic under investigation.

2.1.5 Scoping review stage five - Collating, summarising and reporting

This stage of the scoping review involved collating, summarising and reporting the results. Each of the charted included papers were coded into seven reporting categories from which three reporting themes (Figure 6) were identified.

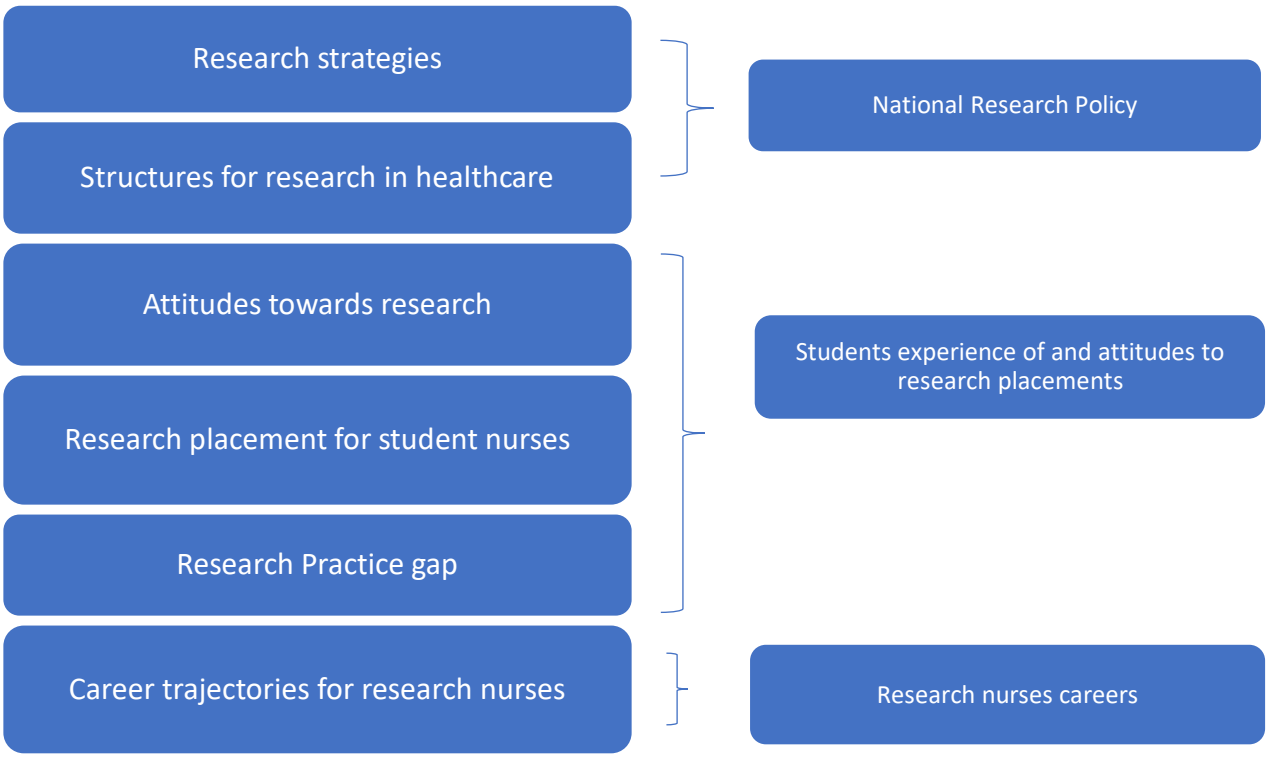


Figure 6: Reporting categories (left) and reporting themes (right) from scoping review.

2.2 Scoping review findings

Arksey and O'Malley (2015), and Peters (2015) remind us that scoping studies do not seek to synthesis evidence and there is no attempt made to present a view on the weight of any included evidence. A scoping study does not make a judgement on the quality of the evidence in the review, it provides an overview of the concepts and associated parallel fields and topics, and the material relating to the research question. The three reporting themes (Figure 6) provided an overview on the policy and educational drivers which support the development of a research unit as a student nurse placement.

2.2.1 Theme one: National research policy.

The NIHR Clinical Research Network is committed to improving the quality and quantity of clinical research being undertaken in the United Kingdom, as well as

improving the profile of clinical research within professional and public domains. Data published in 2019 (NIHR, 2019), shows a year on year increase in clinical research activity across the NHS in England.

As previous deduced in Chapter one, there have been strategies and policy documents which focus on the importance of research in practice in place since the early 2000's (DH, 2005, RCN, 2008). Within this strategic direction, there is a need to explore ways in which this agenda can be achieved. One option may be the opening of clinical research units as undergraduate student placements.

In 2015, the NIHR prioritised embedding their strategy into the undergraduate workforce and showcased exemplars at their national seminar where universities and Foundation Trusts had been collaborating to create research placements for nursing students (O'Neill, 2015). They highlighted the real enthusiasm for expanding placement opportunities and highlighted a growing evidence base about what works for students, showcasing pockets of good practice where student placements in research units had been established and evaluated. Students reported positive experiences of "research in action" and acknowledged the value of seeing research taking place in the clinical area. The report recognised that providing a positive and worthwhile experience for students requires a lot of preparation and continuing support. Issues about the capacity to provide placements in the research delivery infrastructure were acknowledged along with their need to be prioritised, and the need for a coherent and joined up approach across a geographical area.

The national drive to create a more research aware workforce was a significant driver for the focus of this study. Student nurses need to have ample opportunity to experience research in action as part of their placement pathway to ensure they can

make the necessary links between research, evidence and practice. By designing a placement pathway, opportunities to see how evidence is generated could be extended beyond the classroom. With national research policy continually evolving, a research design which could be responsive to changes and growth in research development was critical to this study. An approach which allowed for iterative and responsive cycles of research would allow the study to grow and develop as it evolved, (leading to the selection of *action research* as the overarching research design of choice, this will be further explored in Chapter three.)

2.2.2 Theme two: Designing a research experience for nursing students.

The purpose of a clinical placement is to enable students to engage with the clinical environment and to increase their ability to become clinical decision makers. Students can apply the knowledge and skills learned in the University setting to real practice situations, under the guidance of a qualified mentor. Historically, nursing students have had very limited exposure to the research process “in action” therefore the pockets of excellence described by the NIHR (2015) merited further investigation as part of this study to aid the design of a potential placement pathway.

The scoping review identified three studies which focused on research placements for nursing students in England. Naylor et al. (2014) established a placement for pre-registration nursing students at the Royal Green and Liverpool University NHS Trust for students from Liverpool John Moore’s University. The study does not identify the stage of training of the student nurses but does state they were allocated to the research placement during a time they would be required to write a research proposal, suggesting they were final year students preparing for dissertation. The Trust has a strong research culture and excellent links with the NIHR. A pathway

was created where a group of six students attended a research placement for four weeks, twice each year from 2005 to 2008. From January 2009 to August 2014, the placement length was adjusted from between one and four weeks as the Trust adjusted its' model of placement. Based on student feedback, they found that even a small amount of research experience can be of value and provided a valuable learning experience and insight into the clinical research nurse role.

The second study at the University Hospitals of Leicester NHS Trust, (Harrison, 2014) established a one-week pathway for second-year and third-year nursing students within the NIHR Leicester Cardiovascular Biomedical Research unit. First year students were excluded as it was felt they lacked the necessary experience to fully benefit from the placement. Fifteen students completed the placement and subsequently completed the standardised feedback form for new placement areas. The responses were analysed, and the findings indicated that the placement scheme had achieved its aims; introducing the students to the world of research, raising the profile of research nurses and engaging the next generation of innovators and academics.

The third study described a placement for mental health students in the South of England (Green et al., 2017). A shared protocol was developed for the placement that promoted research awareness and highlighted the career options for mental health nurses in research. Linked to the competency framework for clinical research nurses, the placement was designed to be part of an optional module which students took if considering a career in research. The authors reported initial findings of the placement providing valuable learning in research awareness and offering real insights into the role of the clinical research nurse.

Each of these studies highlighted the importance of mentor preparation and the role that the clinical research nurse plays in student engagement and the student experience. Green et al. (2017) concluded that research nurses as mentors enable students to make a valuable link between theory and practice in a more meaningful way and Harrison (2014) concluded that clinical research nurses benefit by regaining their teaching and mentoring roles and responsibilities.

Whilst these studies describe good practice and the experience of setting up a student placement within a clinical research unit, they did not systematically evaluate or measure the impact of the placement on the student's ability to relate research to practice. All described the positive evaluations and endorsements from both students and mentors but did not address the longer-term effect such a placement may have on the perceived research practice gap or students' ability to use evidence in practice, all of which have implications for the design of a placement pathway if meaningful learning is to take place. A further three studies measured the impact of research in action which could potentially inform this study design and the design of the student pathway. Whilst not situated in clinical research units, the focus of learning in these studies was the research process and the application of research in practice.

The first study was undertaken in Norway (Elsborg Foss et al., 2013) and explored the use of a collaborative model of best practice to develop student nurses' research utilisation in clinical placements. This model was a collaboration between the local university, the hospital and key facilitators, where students were guided through a structured process to select a clinical area for improvement, from a search and critical evaluation of evidence on the topic, through to implementation and evaluation of the impact of the change. 68 second year students and 34 third-year students took

part in the project and were invited to respond to a questionnaire. 38 students (19 from each year) responded along with all four of the registered nurses who took the role of preceptor to the students during the collaboration. The researchers found that whilst most registered nurses and the third-year students felt the process has improved the quality of care, fewer students thought it had created a change in practice. The authors concluded that there was a need for students to be involved in the whole evidence-based process to fully understand its impact and value. They also suggested that a model of collaboration may be useful in helping students understand evidence-based practice.

The second study, also in Norway (Einarsen and Giske, 2018) offered second-year student nurses the opportunity to participate in a research study and then surveyed them in their third year to get an insight into the effect the experience had on their practice. Four cohorts of students were invited to volunteer for the project which lasted three weeks for each cohort. They were provided with instruction and training in the research process. 52 students took part in the research study and were subsequently invited to share their thoughts and comments about their learning outcomes after a year, in a survey. 36 students responded and their comments were analysed using a qualitative content analysis. The studies suggested that the period of supervised active participation in a research study increased their awareness and attentiveness to the subject of the research and enthused them to become more familiar with research. They both suggested that undergraduate students benefit from exposure to the full cycle of the research process, from planning through to report writing, but they do not contextualise this as happening within a research unit. They also acknowledged the difficulties involved in measuring the impact of the experience over time.

The third study, in Canada, described the development of a simulated research practicum in response to limited access to research placements for student nurses. Bird (2019) and Carter (2019) both reported on the practicum; Bird's study (2019) describes the simulated practicum and Carter (2019) went on to measure nursing students' perceptions of learning after the practicum. Both authors collaborated on both studies. Over 350 fourth-year nursing students were offered the choice to complete either a traditional mentor research practicum or a simulated research practicum which lasted six weeks as part of their introduction to nursing research course. At the end of the course, a two group post-test survey design was used to assess the exposure of the students to research activities and their satisfaction with their placements. 304 students took part in the survey over a one-year period, 165 of whom had selected the mentor research practicum and 135 had chosen the simulated research practicum. The authors carried out a statistical analysis of the survey responses, which focused on four main variables: didactic course content, research activities, data collection experiences and overall rating of the research course. The findings of the study suggested that whilst a simulated practicum is of use where traditional nurse led research projects are not available, students placed more value on participation in a live research project. The authors also acknowledged that there were many aspects of real-world research which students who took part in the simulated practicum were unable to access, specifically around engagement with participants.

A further consideration in the design of a clinical research placement pathway is the need to prepare students for what they may perceive as a non-traditional placement. Coyne and Needham (2012) report on their study of students attending specialist clinical areas for placement, where students reported feeling unprepared and unsure

of what they were going into on their first day and experiencing a very different type of placement to their previous experience on a ward. The placement study points to the variety of skills which students will see explicitly performed by their mentors (communication, counselling, assessment, education) and makes a particular mention of the culture and attitudes frequently seen in specialist areas; open, trusting, empathetic, group centred, with a focus on teaching and sharing information. This was corroborated in a student report on his experience in a clinical research unit (Lee, 2011). Coyne and Needham (2012) concluded that to make a specialist area successful, pre-placement information, layered learning objectives and collaboration between academics and the placement areas are essential components. The findings supported the use of speciality placements as a valuable experience for undergraduate nurses, not only in the skills they develop but as a consideration for career opportunities in the future (Coyne and Needham, 2012, Lee, 2011). They also suggested that interviewing students and their mentors is a useful way of measuring their experience, factors considered in the design of this study and incorporated into phase two and three of the design (described in Chapter three).

The findings from an integrative review on student nurses' attitudes towards research (Ross and Burrell, 2019) found that nursing students had a range of positive and negative attitudes towards research but that nursing students did perceive research as important to patient care and safety and the development of the nursing profession. They concluded that engaging with any research engagement activity improves attitudes towards nursing research and generally students see the value of research to professional nursing practice. They acknowledged that more rigorous study is needed to identify which educational approaches are best placed to enhance the student perception of research.

This section of the scoping review has detailed prior research which focused on the student experience of research placements and has highlighted several elements which are central to the student learning and engagement with research in action. The length of placement is a significant consideration with placements from one to six weeks being reported on and consideration also needs to be given to the stage of training the student is at when engaging with a research placement. The literature points to the need for careful preparation of the placement experience and engagement with the mentors/preceptors of students to add value. All of these were essential factors for consideration in the design of this action research study and the creation of a phased approach, starting with the first phase; the design and testing of the placement. It also points to the important role of the mentor, central to the student experience, therefore the mentor views needed to be captured and were added to the research design in phase three. However, the dearth of evidence that supported placement design and evaluation for a research specialist placement signposted towards a research study design that would allow flexibility, innovation and further supported the choice of action research as the study design.

2.2.4 Theme three: Research nurses career development

While there is a paucity of literature relating specifically to the student experience in research units, there is a wealth of literature relating to student experiences in ward settings. The Willis Report (2012) emphasised the need to embed research within the nursing curriculum rather than seeing it as an added extra. However, the role of the clinical research nurse and the work of clinical research units throughout the UK is often not understood and can be poorly perceived by students (Harrison, 2014). Students express the feeling that they are missing out on gaining clinical experience if allocated to a placement in a research unit (NIHR, 2015). A clinical placement is an

area where the student believes they will learn their craft, and they are mostly situated in secondary care, in a ward area, with students working with a mentor to care for a group of patients, who typically are “ill”. There is a need to provide a more transparent insight into the role of the clinical research nurse and the associated challenges and opportunities which could be created with the opening of research units as student placements.

Spilsbury et al. (2008) carried out a qualitative focus group study in the UK to explore the scope and potential contribution of clinical research nurses to nursing specific clinical trials. They used a focus group with nine clinical research nurses using two foci; experiences of being a research nurse and observations of pressure care from a trial and general clinical perspective. The participants reported experiencing a loss of confidence, conflict between their role as a researcher and a nurse, challenges getting clinical staff to comply with research protocols and difficulties remaining motivated. The study identified the need for a co-ordinated, structured approach towards training, professional development and recognition for clinical research nurses. Furthermore, the study recommended more consideration of the ways clinical research nurses are supported and deployed and how to maximise the contribution these nurses can make to the research process. This study was the first of its kind to be carried out in the UK and highlighted the challenges and multiple demands clinical research nurses face. However, it also showcased the wealth of skills and experience clinical research nurses use in practice and the opportunities for student nurses to observe these as part of “research in action”. The authors highlighted confidence, decision making skills, clinical expertise and collaboration as the main skills which could be observed.

Ledger et al. (2008) reported on a project study in the north of England to establish a centralised research system which would enable research nurses to work across a

hospital Foundation Trust with clinical directorates and the research department and to meet the requirements of the Research Governance Framework for Health and Social Care (DH 2005). A working group was convened, and two common themes were identified as essential to the establishment of this system: *employment and accountability* and *professional development and education* of clinical research nurses. The working group created a framework for the recruitment, employment and professional development of research nurses which was trialled with over 100 clinical research nurses, from nine clinical care groups, across five hospital sites. Following a six-month pilot of the framework, it was implemented across the Trust immediately as recommended in the pilot report. The authors identified the need for a clear link between clinical practice at senior level and the research nurse working in that area as crucial to a successful collaboration. The pilot findings highlight the complexity of operationalising this process.

Rickard et al. (2012) surveyed clinical research nurses in Australia. They conducted a mixed methods, cross sectional study using a survey and semi structured interviews to explore the experiences of nurses working in research positions and to assess what organisational support was needed to create structured career pathways in this specialism. They found that whilst job satisfaction was high, there was a need for better mentorship, support and career pathways to this professional group. The authors concluded that research nurses needed mentorship, support and the recognition that researchers in other specialisms are afforded. Whilst acknowledging the study limitations (the sample size was limited to 11 participants) the findings from this study have been replicated in other studies. MacArthur et al. (2014) compared the findings of an online survey conducted in 2012 by the Scottish Research Nurse and Coordinator's Network with two surveys undertaken ten years

previously in a single Scottish Health Board, to analyse of the development of the clinical research nurse role. The study showed that whilst clinical research nurses are highly qualified and experienced, many reported feeling isolated and unable to access appropriate professional development opportunities. The authors recommended that further work should be undertaken to develop a clear, flexible career structure for clinical research nurses to enable them to develop careers in clinical research nursing, academia, management and/or clinical practice. The creation of clear guidelines for induction and training programmes for new clinical research nurses was also recommended.

Whitehouse (2017) undertook a review of research activity in nursing and midwifery across the UK and Ireland as part of a project to assist the development of a research strategy within an NHS Foundation Trust. The findings were used to develop the Whitehouse Smith (2018) model for developing clinical research teams. The study found major inconsistencies in the provision of research impact, visibility and identified across the four countries pockets of both excellence and mediocrity in the way research is managed. The report concluded that organisational structure and culture needed to be embedded with positive views on research. Organisations where senior managers supported research activity and saw it as central to service delivery were more likely to have strong research networks with a high level of research engagement cascaded through teams. Board level support for research, also identified in the work of Ledger et al. (2008), was found to be crucial to the success of the evolving national research agenda.

Whilst the numbers of clinical research nurses in post has risen and their role expanded (Ledger et al., 2008), most notably since changes in legislation (EU, 2001) which allowed members of the research team other than doctors to obtain consent

from study participants, many respondents in the Whitehouse study (2017) still reported feeling isolated. Whilst many reported having access to professional development and support, the lack of a flexible career structure persists. There may be a perception of clinical research nurses that their role, especially if focused on clinical trials, could be quite medicalised. The NIHR Clinical Research Nurse Strategy 2017-2020 (NIHR, 2019) is attempting to address all these issues with a focus on awareness, leadership, innovation, and public involvement.

This theme has highlighted some of the challenges which clinical research nurses face, but it has also showcased the broad range of skills and opportunities which engaging with a research unit can facilitate. There is an opportunity to bring research in action into mainstream nursing education and to promote both the role of the research nurse and the value of seeing all stages of the research process in the clinical setting. This study started with a recognition of a missed opportunity; why research units were not utilised as part of the student nurse's placement pathway. By designing a study to plan and provide such a placement would not only create opportunity for students, it would also raise awareness of the role of the clinical research nurse and the existence of clinical research units and their activity in practice.

2.3 Conclusion

There is a national consensus that development of research units as placement areas for student nurses is a worthwhile route of exploration, with the added benefits of up skilling mentors and creating workforce potential and options for the future. The research/theory practice gap has persisted for many decades and an innovative approach is now required to provide contemporary solutions to traditional problems.

With the development of the role of the clinical research nurse, nursing expertise is now part of the research process, however the sector remains relatively covert within the health and social care setting. There is an opportunity to use *research in action* to determine if exposure to the work of the clinical research nurses, and the way in which the research process is operationalised within hospital settings, has the potential to have an impact on student nurses' engagement with research.

This review of the literature showed there were pockets throughout the UK where placements in clinical research units have been trialled with positive and encouraging reviews. The longer-term effect of a placement on students' ability to embed their practice with research has yet to be tested. The growing opportunities for nurses to engage with research as a career remains relatively unknown. There is an opportunity to bring research in action into mainstream nursing education and to promote both the role of the research nurse and the value of seeing all stages of the research process in the clinical setting. Creating a placement pathway in clinical research has the potential to address the research practice gap and to inform developments in undergraduate nursing curricula. There is potential for a *research in action* study to evaluate the effect such a placement may have on student nurses. An action research design would allow for planning, testing and evaluating the impact of experiencing research in action.

The aim of the study was supported by the findings of this scoping review; there is a need to increase research awareness in nursing students and this may be achieved through observation of, and engagement with, *research in action*. The aims of the study resonated with the findings of the scoping review; the need to enable students to engage with evidence-based practice and the research process, the need to

influence curriculum development and the need to create a workforce competent in research through placement experience.

The scoping review described in this chapter has shown that students who experienced research in action viewed it as a positive learning experience and described experiences which match with the experiential learning theory model, signposting the way towards an experiential approach to facilitating a placement of research in action. Learning in practice was a key focal point for student learning and experiential learning provided student nurses with the opportunity to observe and reflect, in real time, as the basis to learning.

The theory/practice gap, as discussed in chapter one, persists, and an opportunity to address this may be realised using *research in action* as an experiential practice learning opportunity. Planning of the pathway needed to consider how and where students learn and how the placement could enable students with a range of learning styles to engage with the practice learning opportunities. This also had implications for the research design, in that an experiential learning experience may need to be adjusted and revised during the process, leading to the consideration of a phased approach to the study and the use of an action research design. A further consideration is placement capacity and student support, requiring a focus on the mentor/student relationship and the need to ensure adequate support and supervision for students.

The scoping review set out to answer 4 questions:

- “What is known from the existing literature about student nurses on placement in a clinical research unit?”

- “What is known from existing literature about healthcare placements in clinical research units?”
- “What is the impact of placements in research units on research in action?”
- “What impact does a placement in a research unit have on student nurses?”

The existing literature about student nurses on research unit placements showed there are pockets throughout the UK where this is being tried and tested but it is not yet considered a mainstream placement area, however students who have experienced it have found it interesting and valuable. The impact of a placement in a research unit appeared to primarily centre on improved confidence and understanding of the research process. However, the longer-term impact of a placement in a research unit was yet to be fully tested.

Chapter three – Methodology

3.0 Introduction

This chapter starts with revisiting the aims and objectives of this study. It then presents the overarching methodological approach for this study using an adaption of the four elements framework (Figure 7) described by Crotty (1998) which facilities a broad, yet structured approach to the research methodology. The epistemological underpinnings of the study will be discussed by exploring the theory of knowledge which was embedded into the theoretical perspective and subsequently within the methodology. An exploration of the theoretical perspective on which the research was based will describe the philosophical stance which also informed the methodology and will give a justification for the hybrid approach of merging critical realism and constructivism as paradigms for the study. The chapter will discuss the action research methodology used for the study offering justification for its choice. Finally, the chapter will describe the methods which were used to gather and analyse the data.

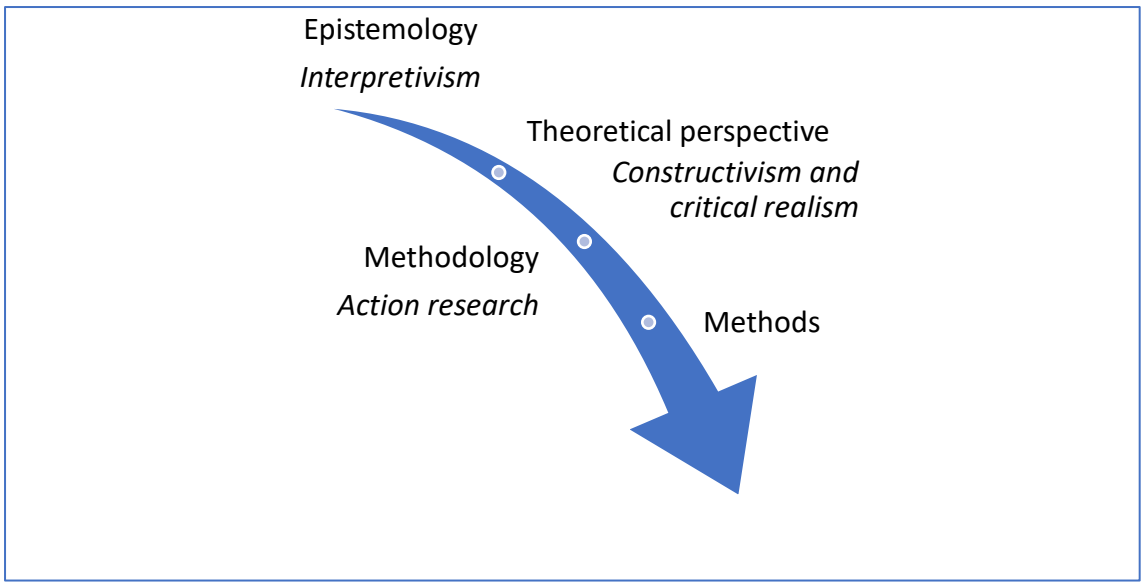


Figure 7: The adaptation of the Crotty (1998) framework

Study aim: To increase research awareness in the pre-registration undergraduate or postgraduate student nurse programme by using a placement pathway in a clinical research unit.

Additionally, the study had sub-aims, which aimed to:

- Generate a body of evidence to support practice opportunities to enable students to engage with evidence-based practice and the research process.
- Provide a knowledge base which has the potential to influence curriculum development to improve the profile of clinical research.
- Create an evidence-based placement pathway to develop research competence in the undergraduate workforce through placement.

Considering the study aim and sub aims, the research question was finalised as:

"How does the experience of 'research in action' impact on student nurses' engagement with research and enable their use of evidence to underpin clinical practice?"

3.1 The adaption to Crotty's research design framework

Crotty suggested the literature on research terminology is confusing, describing the various terminologies of epistemologies, methodologies, theoretical perspectives and methods as "being thrown together in a grab bag style as if they were all comparable terms" (Crotty, 1998, page 3). Instead, he advocates using these terms to generate a hierarchical approach to decision-making in the research process where the research adopts an epistemological position, identifies the theoretical perspective, leading to the choice of research methodology and subsequently the choice of research methods to execute the research project. One of the criticisms of the Crotty framework, which he acknowledges, is the omission of ontology from the framework and his view that it

can be conflated with epistemology, claiming that the two are mutually dependent and difficult to distinguish apart conceptually. This omission is addressed in this study with the inclusion of critical realism within the adaptation of the framework. Critical realism distinguishes between the “real” world, which cannot be observed and exists independently from perceptions and theories, and the “observable” world, constructed from perspectives and experiences, requiring a separation of epistemology and ontology (Bhaskar, 1975).

3.2 Epistemology – Interpretivism.

When trying to determine which research approach best suits a research question, an understanding of epistemology is essential. Epistemology is the branch of philosophy that explores the nature of knowledge; what we know and how we know it (Audi, 2002). Robson and Robson (2002) explain that each research field has its own epistemology – its own way of examining the nature of knowledge. Concerned with the nature of knowledge, epistemology provides an overarching framework for a research study design (Audi, 2002). Every research study equally has its own epistemology; its own way of discovering existing and new knowledge and provides a direction for choosing the most appropriate research paradigm. Crotty (1998) suggested epistemologies can be broadly separated into two philosophical views, the first described as the realist view; that meaning “exists” and that all human knowledge is reached through reason and is based on the study of positivism. The second philosophical view emerged in the social sciences from the middle of the 20th century, to break away from the constraints imposed by positivism. The interpretivist approach rejects the view of human knowledge discovered through reason, but instead suggested that truth or meaning is constructed through our engagement with reality, constructed through experience. It is based on relativist principles; that reality is subjective and differs from

person to person (Scotland, 2012). It acknowledges that people will construct meaning in different ways and that the social world can only be understood from the perspective of the individuals who are participating in it (Scotland, 2012). The interpretive paradigm places the emphases on socially constructed, subjectively based reality, one that is influenced by culture and history (O'Brien, 2001) and is a way of making sense of new knowledge. It is most often associated with qualitative research methods.

There are significant differences between the two paradigms – the positivist view is useful for looking at cause and effect, it is useful for large samples, focusing on facts and formulating hypotheses. The interpretivist paradigm focuses on meaning, trying to understand why something is happening, and is useful for small sample groups for in-depth study. Within this study, an interpretive approach, acknowledging the uniqueness of the individual and the possible impact that a placement within a clinical research unit may have on a student nurse, has been used. There is a moral responsibility to safeguard the principles of nursing and care delivery which a positivist approach may distort (Tanlaka, 2019). Basing a study of this nature totally on the principle of scientific law and deducing knowledge (positivism) would be inappropriate as the nature of how students learn involves applying knowledge to practice, using emotions, and critical decision-making skills in complex situations.

The findings in the scoping review suggest that to create and evaluate a placement in a new environment, for example, a clinical research unit, consideration of the student's individual learning needs are paramount and suggested a realistic expectation is that every student will experience the process of *research in action* differently. The uniqueness of each individual student supports a research approach that acknowledges beliefs, feelings, views and experiences and creates opportunity for these to be considered within the research process.

3.3 Theoretical perspective - A multi-paradigm model of constructivism and critical realism.

Constructivism is the generation of knowledge and meaning from experiences, ideas and understanding (Young and Paterson, 2007). Evidence-based practice in nursing is a constructivist process, where nurses are exposed to problems, the solution to which may be outside of their sphere of knowledge. The challenge is to be able to recognise that knowledge gap and within a rapid time frame, identify, locate and critique information, which is usually in the form of research evidence, contributing to a new understanding of the problem (Barnard et al., 2005). This research study is underpinned by that constructivist view; learners construct knowledge from their own experience, which is driven by active learning and learning by doing (Corbin and Strauss, 2015). Drawing on Vygotskyan social development theory (SDT), which suggested that cognitive abilities and learning are socially guided and constructed, Liu and Matthews (2005) traced the origins of constructivism in education psychology and recognise it as an established paradigm and theory in education. SDT recognises the value that culture has in learning and supports the notion that individuals learn and develop within their role, suggesting that placing student nurses within a community of research active practitioners may present tangible learning opportunities. Dickson et al. (2016) strongly support the use of constructivism as a philosophical paradigm for research in education and Rillo et al. (2020) describe education underpinned by constructivist views to position the student as the axis within the educational process, with the emphasis on developing methodological and procedural skills that allow building of knowledge and developing learning for life.

However, it is not possible to exclusively use a constructivist approach to design, refine, change, and relaunch a placement pathway for students. Constructivism is

essentially the gathering of knowledge, which is based on subjective meanings; for this study it was important not to confine the study to simply discourse, but to also to explore the causality underpinning the discourse and to include consideration of the observations of the research participants.

3.3.1 Consideration of learning theory and the value of constructivism

The current student nursing curriculum is firmly situated in the theory of constructivism; that is the generating of knowledge and meaning from experiences, ideas and understanding (Young and Paterson, 2007). Constructivist learning has been defined as an education approach towards creating environments, activities and methods that focus on individual students developing an understanding of subject matter that aids future learning (Abualhaija, 2019) and has been a key underpinning philosophy in nursing education since 2000 (Brandon, 2010). Evidence-based practice in nursing is a constructivist process, where nurses are exposed to problems, the solution to which may be outside of their sphere of knowledge. The challenge is to recognise that knowledge gap, and within a rapid time frame, identify, locate and critique information, which is usually in the form of research evidence, contributing to a new understanding of the problem (Barnard et al., 2005). However, that requires an understanding of how evidence is generated and prior to this study, that knowledge was being generated predominantly through classroom-based learning.

This research study is underpinned by that constructivist view; that idea that learners construct knowledge from their own experience, which is driven by active learning and learning by doing. Experiential learning theory (ELT) focuses on the use of experience as the central role in the learning process (Kolb, 1984; Kayes, 2005) and identifies four basic learning styles within the ELT model (Figure 8).

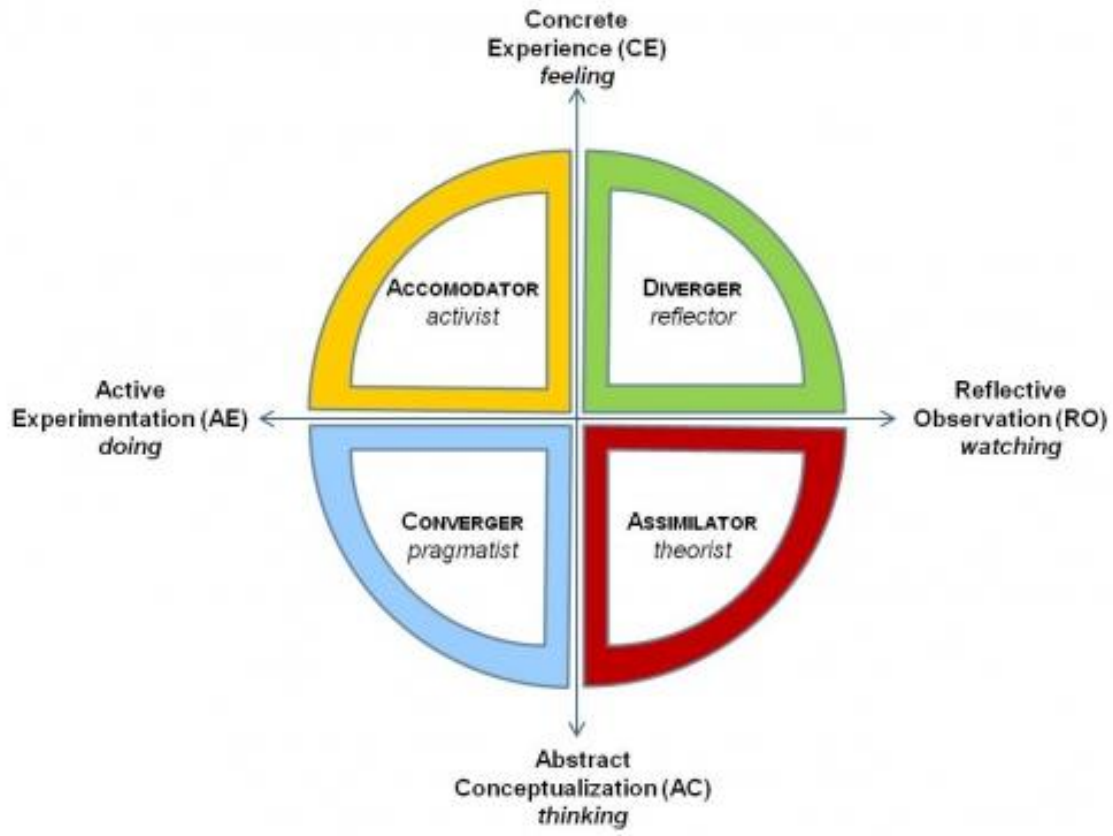


Figure 8: Kolb's Experiential Learning Theory

3.3.2 Critical realism

Critical realism, whilst broadly situated within an interpretivist epistemology, acknowledges social reality, and offers a paradigm that enables an opportunity for change (Syed et al., 2010). It considers the interaction between structure and mechanism which produce identifiable events (Mingers and Standing, 2017). Structures are identified as a physical or social form; mechanisms can include capacity or potential to do certain things and events are identified as an occurrence or action resulting from a mechanism (Mingers and Standing, 2017).

Critical realism emerged from the philosophies underpinning social science research and centres around understanding the non-observable mechanisms that cause events

(Bhaskar 1975). It focuses on understanding, rather than merely describing, social reality and seeks to understand the mechanisms which generate social events and distinguishes these events and mechanisms from our perceptions (O'Mahoney, 2016). It moves away from cause and effect to experimental approaches, manipulating the object of the investigation to produce outcomes, suggesting it would be suitable for evaluating an educational intervention.

Using the epistemology of critical realism allowed the study design to add elements to further understand the social elements of the student experience in a clinical research unit. Using a tri-partite approach to data collection, the students used a diary in phase two, which features only cue questions and enabled the participants to record any type of observation or understanding of "research in action". It allowed them to record background information as to what they witnessed and allowed them to provide their understanding of why things happened in their practice area, as they happened. It enabled them to create context for diary entries and to provide their own explanations at the time of the event creating an interface between their experience of "research in action" and the reality of social reality in the clinical area.

Additionally, whilst this study was broadly seeking to extract information about a learning experience, and sought views on experiences of a student placement, there were elements of the study where knowledge was accessed using quantifiable methods and changes could be made based on the numbers of students and mentors expressing similar views. Critical realism attempts to bridge this gap between traditional quantitative and qualitative approaches (Hawke, 2016).

Using a hybrid of two theoretical perspectives, later reported by Bogna et al. (2020), was identified as an approach which created a deeper, qualitative study, which

assisted in the connection between a discussion of ideas and opinion and causal powers (Roberts, 2014). Bogna et al. (2020) described an unconventional application of two research paradigms; critical realism and constructivism and concluded that the adoption of a multi-paradigm model enabled a more insightful answering of the research question, and an understanding of participant perspectives and associated causality.

3.4 Methodology – Action Research

Action research (Figure 9) sits within the transformative paradigm, where reality can be changed when the researcher addresses social issues and where participants work together to solve a problem (Jacobsen, 2017). It is used by practitioners to solve a work-based problem and allows the researcher opportunity to reflect on and explore the consequences of their beliefs, assumptions, and practice, aiming to creating understanding and opportunity to develop new practice. It can be viewed as a two-level process of change; firstly, as a mechanism for self-change where the researcher is the subject of the action and secondly, as a collective process often contextualised in a classroom, office, institution, or community (Mertler, 2019). It involves participating in a change situation whilst actively conducting the research.

Figure 9: Action research model (McKinnon et al. 2019)

The interpretivist paradigm traditionally lends itself towards qualitative methods of research. Strauss et al. (2008) define qualitative research as any type of research where the findings are not produced by a statistically or quantifiable analysis. Used to study real people in the natural setting, qualitative research is seeking to understand how aspects of reality impact on their experiences (Waters, 2004). This definition reinforces the notion that qualitative research occupies a block of space at the opposite end of some imaginary research spectrum (Waters, 2004) suggesting it had a disparate set of rules and boundaries. However, Coughlan (2019) argues that action research cannot be considered solely a qualitative methodology in the manner that many who think of research in that dualistic quantitative/qualitive bipolarisation way, which further validates the multi-paradigm theoretical perspective of this study. It is not the research paradigm that determines the rules; it is more about the way in which these methods are applied in practice (Berg and Lune, 2011).

As an approach, action research has gathered momentum in the field of education in recent years and is becoming increasingly popular as a form of professional learning (McNiff and Whitehead, 2014; Bradbury et al., 2019; Mertler, 2019). Action research sees the researcher as part of the research process and its context. It generates opportunity for inquiry and investigation and enables the researcher to use the findings to create alternative approaches to generate improvement and innovation. It focuses on *action* and *research*; taking action to foster an improvement and using research methods to come to a new understanding of why and how improvement has happened. This design fits with the research aims, as it creates scope to address a current problem with an innovative idea, create an intervention and then explore what it was about the intervention that created a change. An action research model allows for the collection of data, examination and scrutiny of that data and will generate suggestions for alternative ways of working as part of the Plan, Do, Study, Act, (PDSA) cycle approach.

PDSA cycles have been widely used in action research and in quality improvement (Magnuson et al., 2019; McNichols et al., 2019) as a method of learning from practice to improve it. With the constant need to respond to curriculum development and advances in health and social care delivery, undertaking meaningful research is critical and the potential for action research strategies using PDSA cycles is visible in contemporary literature (McNicholas et al., 2019; Hamilton et al., 2020).

In action research, a commitment by the researcher to personal action-taking, and to improving the human social condition directly, is an integral and necessary component of the knowledge generation process. The central features of action research involve a repetitive and cyclical process of diagnosis, analysis, action and evaluation; a high degree of cooperation and involvement between researcher and practitioner, with

constant feedback loops, and a commitment to use findings to solve social problems (Kemmis, 2009; McKinnon, 2019).

3.5 Methods

This research study set out to change the educational experiences of student nurses by using a clinical research unit as a placement in the practice area. This section will give an overview of the methods used in the enquiry, providing a description of the study design, the study participants and the sampling strategy, and the three phases of the action research cycle. Each of these cycles would be replicated with new student groups using evaluations and emerging data to inform the next cycle. Planning for student placements in the clinical research unit was scheduled following completion of phase two in the first cycle, once participant interviews has been completed. The conceptual framework which underpinned the concept analysis will be introduced and the ethical dimensions and considerations will be discussed.

3.5.1 Design

The essentials of an action research design follow a characteristic cycle whereby initially an exploratory stance is adopted, an understanding of a problem is developed, and plans are made for some form of intervention. The intervention is undertaken, during which time, observations are collected in various forms. Revised or new interventional strategies are then undertaken, and the cyclical process repeats, continuing until an understanding of the problem is reached. The protocol is iterative or cyclical in nature and is intended to foster deeper understanding of a given situation, starting with conceptualizing and particularizing the problem and moving through several interventions and evaluations (Reason and Bradbury, 2001; Gall et al., 2007; Denzin and Lincoln, 2011).

The primary aim of this study was to create a placement pathway within a clinical research unit for student nurses and to evaluate its impact on their subsequent *assessment of research*, *engagement* with *research* and their *confidence to apply evidence* to clinical practice. For this study, one action research cycle was divided into three distinct phases (Figure 10) which happened between January 2015 and December 2018 (Figure 11). Using an action research design, created scope to devise iterative phases, starting with the design of the placement and testing it with a small group of students.

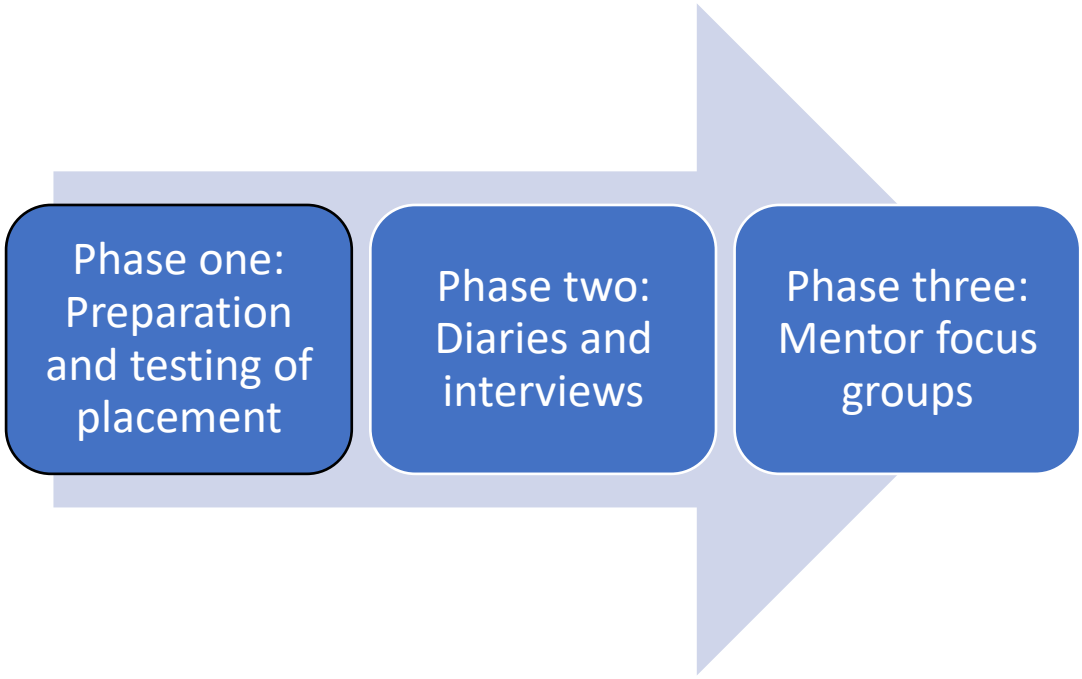


Figure 10: Action research cycle - Phases of the study

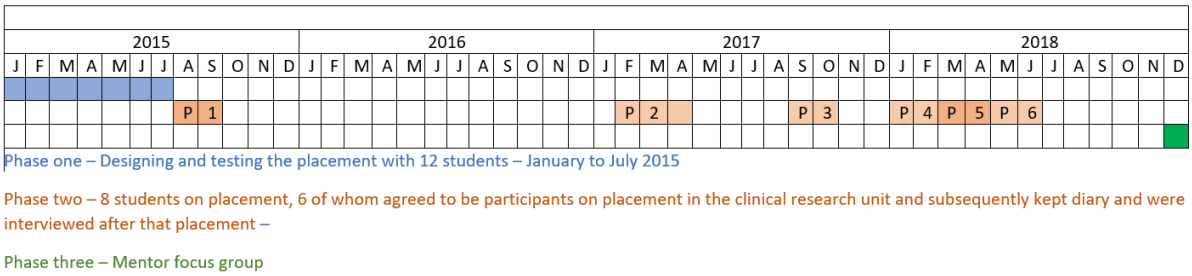


Figure 11: Dates of each phase of the cycle

3.5.2 Phase one, two and three

Phase one focused on designing the learning experience, (the intervention) from both a student and mentor perspective and testing it with a small group of students. 12 students attended a two-week placement as part of the hub and spoke model of student placement. Learning opportunities were identified by mentors on their practice education portal website (Figure 12) which students could access prior to their two-week placement. Learning outcomes for student nurses are planned for students in advance of starting their pre-registration nursing programme as part of a pan London agreement creating a Practice Assessment Document, used by each student. Individual learning outcomes for placement areas are not created, students use a variety of learning opportunities to enable then to achieve pre-established essential skills and professional values throughout a varied placement pathway. The practice assessment document is divided into three parts- essentially one part is completed over a year's placement experience. Depending on the nature of the service being provided in the placement area, the opportunity to achieve these varies, for example, the clinical research unit provided extensive opportunities for students to observe expert communication with clients whereas a ward location provided more opportunity

for developing clinical skills, such as medication rounds and nutrition, hydration and hygiene.

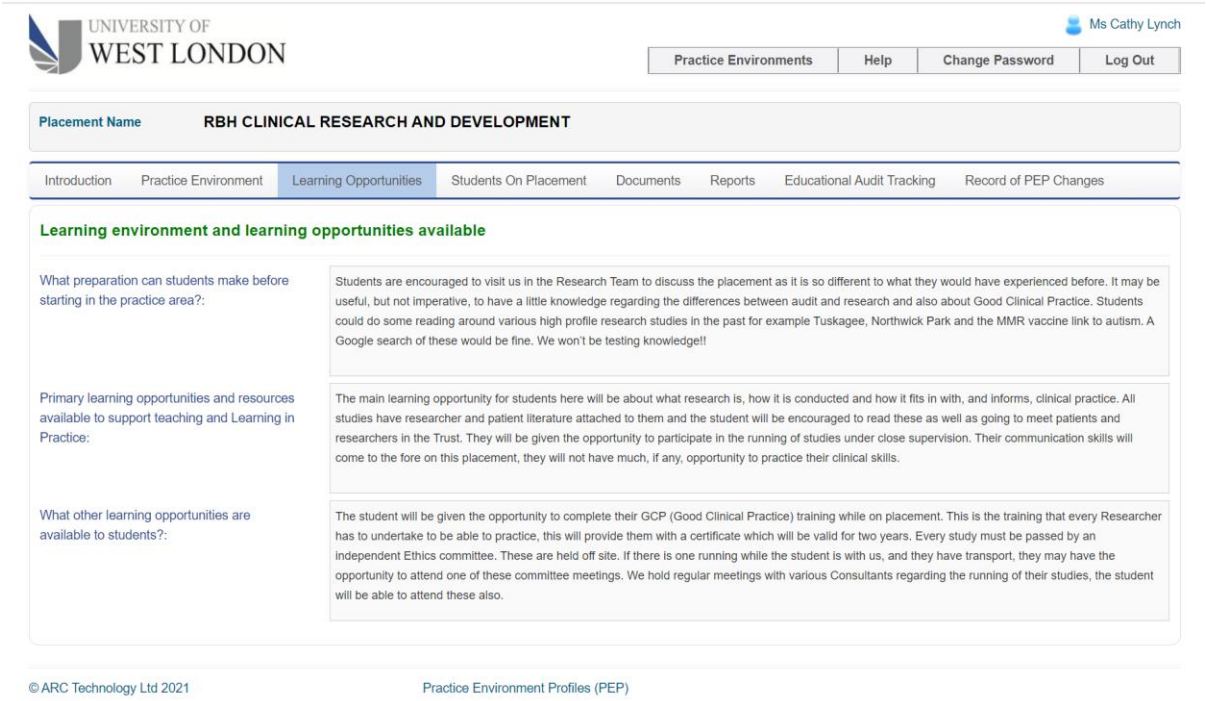


Figure 12: Learning opportunities identified in the clinical research unit for students.

Survey data (Appendix 3) was collected by mentors at the start of the placement (on the first morning) and evaluative data was collected as part of the normal student quality assurance process on completion of the placement. Following review of the data, changes were made to the placement length and the second group of 12 students attended a 4-week placement, after the clinical research unit was established as a full hub placement.

Phase two of the cycle was designed to create a period of consolidation for the 12 students who had attended a full four- week placement and after that, to capture an insight into the student experience of using the knowledge gained from the clinical research unit on or in subsequent placements using a grid diary (Appendix 4). It also provided opportunity for participants to consider the third aim of the study; their

confidence to apply evidence to practice. During this phase, eight of the 12 students agreed to become study participants and were interviewed (interview schedule available in Appendix 5) to further explore the issues identified in the data and to allow any new insights to emerge. with research and willingness to apply evidence in their practice.

Using a diary is a well-established method for collecting data in health and social research; (Jacelon and Imperio, 2005, Alaszewski, 2006) and can be used to provide primary data, or as a precursor to or follow up on interview data (Välimäki et al., 2007). Diaries offer a valuable alternative or add-on to interviewing in qualitative research, particularly when it is desirable to collect data unaffected by the researcher's presence (Nichol, 2010). Using a diary can reduce bias as data is recorded in real time and reducing the bias of recall. Therefore, findings potentially can have greater validity and relevance and are likely to be more accurate. The diary method had the additional advantage of allowing change and transitions of behaviour and processes to be recorded. Diaries maintained over a period of time may reveal patterns, which draw on the participant's interpretation of events and perspectives on them as they happen (Bartlett, 2102).

Snowdon (2015) described an e-diary as a useful form of record keeping that is becoming increasingly popular, as technology becomes more accessible and familiarity and confidence with devices improves. Hensel (2014) highlighted the benefits of e-diaries and their contribution to the understanding of health where diarists are typically asked to record and e-mail their diary entries directly to the researcher, either at the end of the day or as they happened using various forms of technology, for example smartphones or tablet devices. Whilst the more contemporary literature pointed to using the new media and technology to collect and assimilate quantitative

data in research projects (Atienza et al., 2006, Bastyr et al., 2015, Hundert et al., 2014, Bromberg et al., 2014) there was a dearth of evidence describing its use in generating qualitative data. This did not however present an issue with validity as the principles of diarising are the same; the only adjustment is the medium used to collect the diarised entries. The rationale for using it in this project was for ease of access – most students had smart phones or tablets or could access the tool on a regular personal computer which students had access to during this placement which would encourage completion of diary entries.

Drawing on the work of Kenten (2010) and her work using diaries on social research projects, it was possible to extract the principles which underpin diary design and guidance for the participants, and to transpose these to an electronic format to create a reliable and valid tool for data collection. She advocated the use of solicited diaries; a form of diary that individuals are requested to complete, and which was tailored to collect specific information. Validity was assured through the strong health research bias in the use of diaries to investigate a wide range of experiences. Kenten also pointed out that solicited diaries are constructed by both the participant and the researcher, through their design, content and analysis (Kenton, 2010)

Bartlett (2012) suggested supplementing the diary method with a post-diary interview; the interview can provide an in-depth holistic understanding of the participants and allows data to be collected in the natural setting**.** Kenten refered to this as the diary, diary-interview methods, where the diary keeping period is followed by detailed questions about the diary entries and was considered to be one of the most reliable methods of obtaining information (Corti, 1993, Zimmerman and Weider 1997). As there was a significant body of evidence to support the use of diaries and the diary interview method, the diary was not further tested prior to this study.

Following the student placement on the Clinical Research Unit, students who had consented to take part in the research study were invited to keep a diary for two weeks. For some students this may have been several placements after their experience on the Clinical Research Unit, for others it may have been the next placement they took. The tool was created using a free app, Grid diary, (Illustration xxx) so participants had the option to complete it and return electronically or to print the diary template and fill by hand or to word process it. The grid was designed to allow participants to comment on each of nine elements, which focused on their research awareness and how their knowledge and experience of being on placement in the research unit affects their practice on subsequent placements.

Phase three incorporated the views of the mentors of the participants, to triangulate the findings and identify support and organisational issues emerging from the placement pathway. Figure 13 shows the three phases of the study design.

The research question for this study drew on the findings of the literature review reported in chapter two, which suggested that the research aware practitioner has three distinct elements, each of which can be explored from different perspectives as a process of triangulation. The elements which were under scrutiny, linked to the objectives of the study, were the student's ability to *assess* research, their *engagement* with research and their *confidence* to use it in their own practice. Each of these elements were used to design the data collection instruments.

3.5.3 Rigour

The rigor of data analysis was enhanced by using a team approach (Lincoln and Guba, 1986) including the PI, the mentors of the students, the placement manager and the practice education support unit. Survey data from phase one was initially reviewed by

the mentor of each student and then reviewed by the PI. Placement evaluation data was reviewed, and issues were highlighted by the Practice Education Support Unit. The data was further reviewed by the PI and the Placement Manager as part of a bi-annual Quality Review process, which included representation from practice education staff within the Trust. Diary data were reviewed by the PI and the principal supervisor as part of the supervision process. Further clarification was provided by the participants during the interview process. All the interviews were transcribed verbatim and checked and rechecked for accuracy. Transcription software (Express Scribe) was used to assist the transcribing process as it included feature such as slowing down the speed of the conversation, pausing and minimising background noise. Once the transcription of each interview was completed, the recorded audio was reviewed again in tandem with the transcription to check for missing or added words. The same process was followed in phase three by transcribing and checking the transcripts against the audio recordings. To further enhance rigour, the transcripts were also checked by the lead nurse who was a study participant, who confirmed the accuracy of the content.

3.5.4 Study location

The context for this study was a large Foundation Hospital Trust in the South of England which provided placement opportunities for student nurses studying the pre-registration undergraduate and post-graduate nursing courses at the University of West London, where there were excellent relationships between the senior nursing management team and the university. As the lead link lecturer between the Trust and the university, the principal investigator had established networks and contacts throughout the Trust.

Prior to this study, the clinical research unit, located within the Trust geographically but funded by the National Institute for Health Research, had not been part of the placements route for student nurses. Traditionally, clinical research units have existed outside the organisation in which they sit, with funding for research units being drawn down from central government and more latterly from NIHR Clinical Research Networks (UKCRC, 2021). In Foundation Hospital Trusts, they were part of the corporate network of care as opposed to belonging to networks at the interface of service delivery. As such they have been traditionally excluded from the placement route which student nurses take.

As an expanding department, newly recruited alumni to the unit provided the initial impetus for exploration of the area as a student placement area and discussions about how it could be operationalised began in 2015. Selection of placement areas in the Trust is based on several factors; the nature of the work carried out in the placement and if a placement there would enable a student to meet module learning outcomes being the primary considerations. Early discussions identified that the unit could present multiple learning opportunities, along with opportunities towards bridging a very long-standing gap between research and practice, further confirming the viability of the unit as a placement.

3.5.5 Sampling strategy

An important stage of any social research project is establishing a sampling procedure (Flick, 2015). It provided the opportunity to determine which groups or cases are integrated into a study and has the longer-term advantage of enabling generalizability and transferability of the findings and application to other groups at a later stage. Initially, it was necessary to determine the study population; that is the mass of

individuals to which the statements of the study refers, with regards to the operationalization of the study and the statements or questions which are being tested. Sampling strategies fall in to one of two domains; probability sampling, where subjects are selected randomly and non-probability sampling which was based on the non-random selection of participants (Walliman, 2015). With qualitative research methodology, the general trend is to apply procedures of purposeful or theoretical sampling.

Theoretical sampling is useful when the research project is aiming to generate a new theory (Glasser & Strauss, 1967). It sits comfortably within action research and seeks to understand social phenomena by using a succession of participants and building on the data collected and analysed to produce new theoretical concepts from the data as it emerges (Chenitz and Swanson,1986). It is a very flexible approach, allowing the researcher to alter plans and be responsive to emerging theory to guide future data collection. However, it is a complex approach to identifying study samples and may require multiple locations to enable a depth of categorisation and to generate emerging theory (Oppong, 2013). The initial part of the sampling process in this instance was beyond the control of this project; students were allocated to their placement area by a university placements team who work in conjunction with the Trust's placement manager. Placement areas are decided based on the student placement profile, (for example, considering any gaps in the student placement experience or limited exposure to a specialism or area), their geographical location, and the capacity agreement with the placement area. In this instance, the clinical research unit had agreed to take students who were in the second or third year of the BSc Nursing programme or the second year of the Post Graduate diploma in Nursing. Allocations are arranged six months in advance and students were informed of

placement areas as soon as the evaluation of their previous placement had been completed. This adds an element of total population sampling, a purposeful sampling approach where the whole of the population of interest is being studied. This in essence restricts the sampling process to a non-probability approach and the use of a convenience sample, however it could be argued that this could also be perceived as a purposive sample, as these students are “typical” students and representative of their student group, which is part of the wider population of the student nursing community.

One of the potential risks to this project was the possibility of under recruitment; an action research study requires a research sample which is sufficiently robust to assure credibility and transferability of the data. Ideally, between six and ten students would make up the participant group and a similar number for the mentor focus group. Due to department constraints with space, only one student could be facilitated for placement at a time and whilst data saturation is not a typical element of action research, this approach was useful when determining the end point of this project. Twelve students completed the evaluation data for phase one, eight students, following completion of a revised placement were identified as being eligible to participate in phase two as they had completed a placement in the clinical research unit.

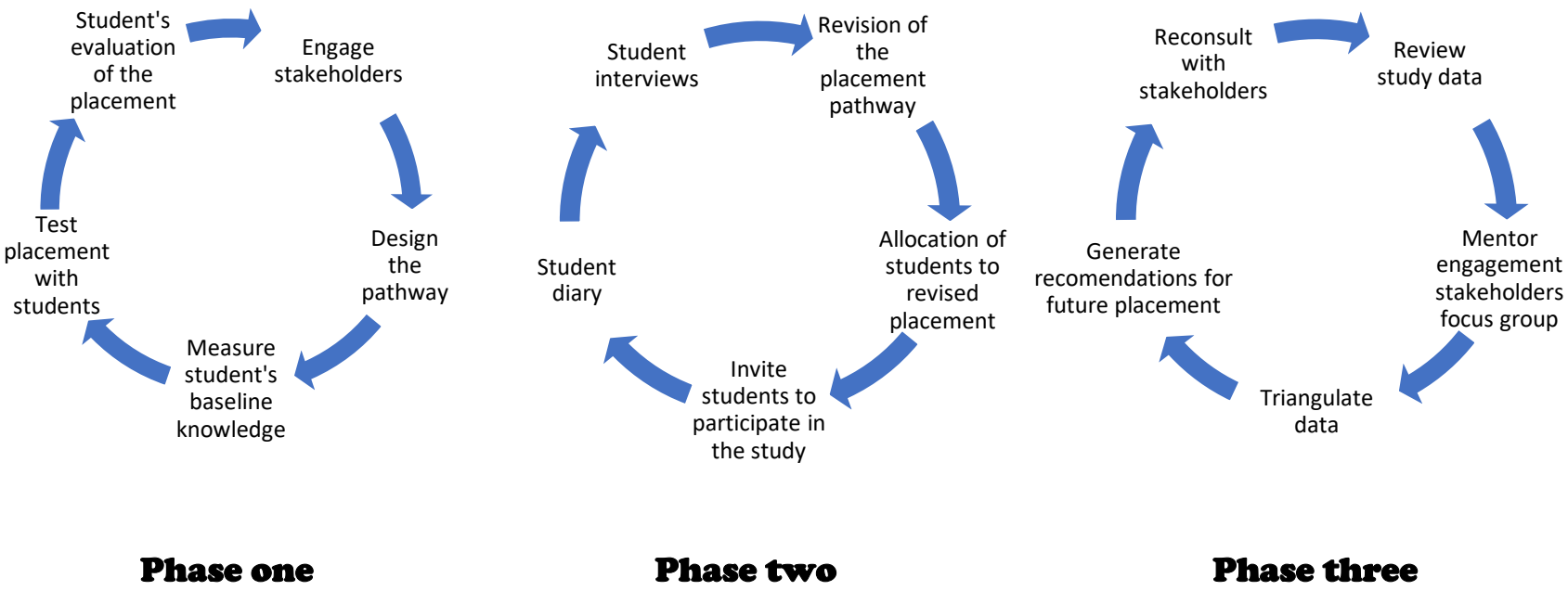


Figure 13: Study design - The three phases of a single action research cycle.

3.5.5 Methods for analysis

Silverman (2015) suggested when dealing with qualitative data, to start as soon as data comes available. He suggested transcribing, for instance, just a couple of interviews and developing a detailed analysis of a limited amount of data, which he referred to as intensive analysis. He suggested this will then provide a good initial grasp of the study phenomena to allow for the selection of the relevant features of the whole data set (extension analysis) and pointed to the use of validated frameworks to assure the validity of the research findings. In education, evaluative frameworks have been used since the 1960's to evaluate the impact of educational initiatives (Kirkpatrick, 1967) and have continued to be developed and refined. Kirkpatrick's model was originally designed as a four-stage approach to evaluation, progressing through levels of "reaction", "learning", "behaviour" and "results". Adaptation of this work, notably by Barr et al. (2009), Belfield et al. (2001) and Moore et al. (2009), has produced one significant conundrum; that each of these frameworks are, to all extent and purpose, "conceptual frameworks" rather than fully validated models, and poses the question of whether it is, in fact, possible to validate a concept. A further dimension to the debate on educational evaluation tools is added by Hakkennes and Green (2006), who moved away from a hierarchical approach and adopted categories in no order to measure outcome domains. There have been several challenges to the Kirkpatrick model and its subsequent iterations; most notably summed up by Yardley and Dornan (2012), in their systematic analysis where they concluded that medical education is a more complex system than business, where stakeholders were patients, families and healthcare communities and alternative ways of evaluating healthcare education need to be explored.

Against this backdrop was a new conceptual model for evaluation; the 7I's framework, devised by Roland (2015) as a framework for evaluating educational interventions with groups of doctors. The framework (Figure 14) was a linear approach rather than a hierarchical one, bringing together learning and behaviour as a common domain. The

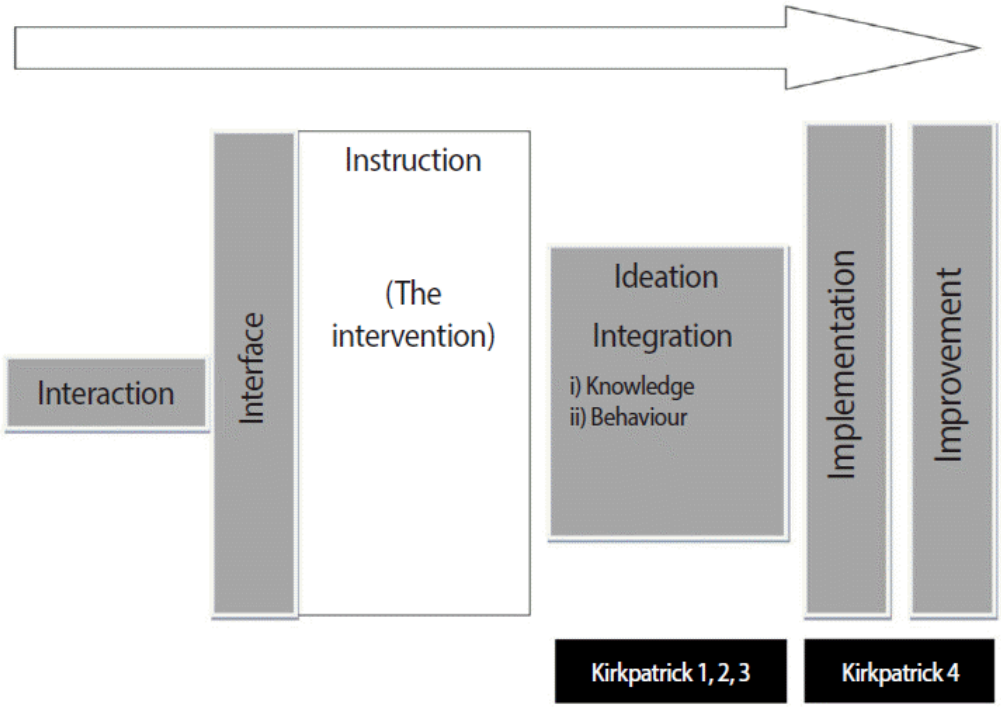


Figure 14: Roland's 7I framework

model used the concepts of "ideation" (what you think you have learned) and "integration" (what you have shown you have learned). In recognition of the complexity of healthcare, the concept of results from Kirkpatrick's level 4 becomes "implementation" and "improvement" which enabled patient benefits to be measured by both experience outcome measures and clinical effects.

This model was applied as it aligns outcomes with improvement and patient benefits which is central to the philosophical and ethical principles of the study. The analysis of the data for the purpose of this project had the potential to become complex and

unwieldy, therefore a clear plan of how this was managed was established at the outset. The data analysis schedule for this study was to conceptualise all the data within the Roland 7I's model using the seven domain headings (Figure 15).

7I Domain	Measures
Interaction	The degree to which participants engage with and are satisfied with the instruction
Interface	The degree to which participants were able to access the instruction
Instruction	The details of the intervention itself
Ideation	The perception of improvement following the instruction
Integration	The change in both knowledge and behaviours as a result of the instruction
Implementation	Whether change across individuals, departments or organisations following the instruction has been demonstrated
Improvement	Whether the instruction has resulted in improvements in patient care and experience

Figure 15: Explanation of the domains of the 7I framework

The first set of data, the survey data which included questions with a multiple-choice answer. was entered into an excel spread sheet and a set of descriptive statistics was generated, giving percentages of correct answers achieved for each question. This data was used to design the learning experience and to prepare students and mentors for the placement by providing a baseline of students understanding of how the clinical research unit functions and an understanding of their perceptions of the research process and the roles of the staff in the unit. The student evaluation data was extracted from the Practice Support Unit database and organised using an excel spreadsheet.

Diary data was extracted electronically as PDF documents and entered into NVivo, and a coding system was applied to generate categories and themes. Silverman

(2015) suggested content analysis is appropriate for textual investigation, where a set of categories are established and then the number of instances that fall into each category is counted. He pointed out that categories need to be sufficiently precise to enable different coders to arrive at the same results with the same body of material, which will add to both reliability and validity of the findings.

The interview data provided the largest data set and as advised by Silverman, (2015) the first two interviews were transcribed verbatim and analysed intensively using a qualitative thematic analysis. Braun and Clarke (2006) suggest that thematic analysis has been poorly defined across disciplines, unlike other approaches, such as narrative or grounded theory, however Seal (2016) suggested part of the value of thematic analysis is in developing an ability to think critically and analytically about qualitative data. Processing large volumes of data, creating linear coding patterns, was made easier with the understanding of how students experience placements and what challenges and opportunities they create. Boyatazis (1998) explained thematic analysis as finding patterns in seemingly random information.

Focus group analysis was facilitated by qualitative content analysis, described by Wilkinson (2011) as the approach used by many published focus group studies and involved:

- Deciding on a unit of analysis – the utterances of the participants
- Developing a coding system
- Applying the codes systematically across the transcript
- Applying tabulations of instances of codes (adapted from Silverman, 2014).

All these datasets will be reported as findings in chapter four, five and six.

3.5.6 Ethics

Ethical approval for this study was granted by the UWL Ethics Committee prior to the commencement of the study (Appendix 6). Revised guidance, published by the Health Research Agency in June 2016, confirmed that existing partnership arrangements with the Hospital Trust where the research was situated could continue. The Research and Development department at the Trust confirmed these ongoing partnership arrangements and were provided with a copy of the UWL ethics approval and a copy of the research protocol.

A participant information sheet (Appendix 7) was sent to all those who agreed to participate in the study, and consent was sought (Appendix 8) prior to the start of the focus group meeting. Participants were invited to discuss the study and their participation in it with the Principal Investigator, to discuss any aspect of the study or ask specific questions. They understood that they could withdraw from the interview or the research process at any time. Signed versions of the consent form were emailed to the Principal Investigator and confirmation of receipt was acknowledged at the start of the focus group meeting. Anonymity was assured and no issues or questions were raised prior to the start of the focus group interview. The interview was recorded on a digital voice recorder and subsequently transcribed and stored on a secured network using university storage. Data was retained for the duration of the research project in line with university research governance guidelines.

Miles & Huberman (1994) identify several key areas for consideration when planning research so as not to compromise any of the participants of the research. Addressing each of these areas provided early opportunity for clarifying and pre-empting any potential ethical dilemmas which might interfere with the overall integrity and quality of

the research. Echoed by the UK Economic and Social Research Council (ESRC), its framework for research ethics (ESRC, 2015) is designed on a similar principle-based approach. The University of West London's ethics process for research undertaken in the College of Nursing, Midwifery and Healthcare takes into account the viewpoint presented by Birch et al. (2012) who point to the need for a situated ethics approach, which has a greater focus on the relationship between the researcher and the participant and the research context, which in turn helps to identify the ethical dilemmas which may arise during data collection and fieldwork. This leads the way for a values based ethics approach (Doucet and Mauthner, 2012; Wiles, 2013) which is viewed as an ethics of care, where the researcher's primary responsibility is to the people who participate in their research and to the wider communities of interest.

3.5.6.1 Ethical principles

Generally, interpretated as fair and equitable treatment of study participants, (Varkey, 2020) justice was maintained throughout the data collection process by taking into account each individual's contribution to the study and by using and reusing the same interview schedule to ensure each individual's voice was heard and valued. Autonomy recognised the rights of individuals to make rationale decisions and choices and was maintained in the study with the acceptance that not all of the 12 possible participants choose to participate in phase two of the cycle and no further attempts (after emailing addresses held on file by the University) to contact them were made. This research project gave an assurance to participants, through the briefing pack and reinforcement at each stage of the data collection process, that the research was based on the principles of non-maleficence (not doing harm) and beneficence (doing good). The Data Protection Act 1998 regulates the use of information that relates to an identifiable living individual, as well as information which, when combined with other data

accessible to researchers, would permit the individual's identification. For this research study, the identity of the students and mentors who participated was anonymous. Students were asked to email their grid diary from their student email account and the data was extracted and transferred to a database with secure storage within UWL servers. The emails were then deleted and the recycle box emptied. The recordings of the post diary interview and the mentor focus group did not contain any identifiers and recordings which were initially stored with UWL secured storage until transcribed, were subsequently deleted.

3.5.6.2 Ethical dilemmas

An ethical dimension to this study emerged though the advertised role of the researcher, as a member of the university/Trust link lecturing team. This role was to act as link between students and mentors and the university, providing support for students who are under-achieving and for mentors in their role as assessors in practice. This could be perceived as having an "insider role" in the research process, potentially with power over students and could impact on recruitment. Brannick and Coughlan (2007) consider the value of insider research in action research projects and acknowledge the long debate on whether researcher positionality has a positive or negative impact on the findings of research, concluding that there is no reason why being native is an issue and that the value of insider research is worth reaffirming.

Four senior lecturers were allocated as link tutors to support students on placement a the Trust where the study took place and has an already established successful model of team linking, with one lecturer being "on-call" each week to respond to student queries which came to a dedicated email in box or thought a link mobile phone number. During the data collection period for this study, the team agreed that any

queries which came from students on placement in the clinical research unit would be responded to by a member of the team other than the PI to ensure there was no conflict of interest. All students on placement, whether study participants of otherwise, were made aware of this arrangement through their mentors. During the two years of data collection, this facility was not required to be used.

3.6 Conclusion

Conducting a piece of research in a healthcare setting presents numerous opportunities, not least of which is the opportunity to add to the body of knowledge that improves outcomes for patients. At the start of the planning for this project, there was uncertainty about how the impact of a student placement in a research unit could be measured. Given the multiple uncontrollable variables, measuring this experience exclusively through quantitative data was perceived to be fraught with difficulty, but provided the opportunity for an alternative enquiry from an interpretivist perspective, using a multi-paradigm theoretical approach, using an action research design. Exploring the range of ways in which data can be collected for an action research project opened routes for data collection from multiple sources, all at different times and stages of the project, all having the potential to revisit and improve both the placement experience and the data collection.

Exploring the use of conceptual frameworks and the debate as to the whether these can ever be truly validated, opened other opportunities and an extra dimension to the study in the testing of a new framework to evaluate the educational intervention within which the study was situated. Analysing data from multiple sources and using different analysis tools had the potential to create a spectrum of results from a rich dataset.

Chapter four: The first phase of the action research cycle – designing and testing the learning experience.

4.0 Introduction

This section of the chapter discusses the first phase of the research study which made up the action research cycle (Figure 8). The phases ran concurrently as students were allocated to the clinical research unit placement, completed the placement and subsequently completed a traditional placement, to allow them to use skills and knowledge gained in the research unit. The first phase of this study focused on designing the experience. The practicalities of a student entering a non-traditional placement area can present multiple challenges, therefore mentors needed preparation and the details of the student experience needed to be consulted on, agreed and designed. The purpose of this phase was to create a learning experience which would introduce students to the concept of *research in action* in a clinical research unit.

4.1 Participants:

A scoping exercise was carried out which identified the key stakeholders within the project and explored all the key areas which needed addressing prior to students coming to the placement. A stakeholder analysis and mapping of key personnel involved in supporting and delivery of the placement experience was undertaken, and lines of communication were established, acknowledging the competing agendas of practice and education. A schedule of consultations with key stakeholders in the university and the clinical research unit was undertaken, to explore commissioning the unit as a placement. Group meetings were held with the nursing lead for the clinical research unit, the Trust placements manager and the university link team. Prospective

mentors were invited to subsequent meetings to plan a schedule for students to provide a broad educational experience. Once this had been agreed in principle, the focus was to design the detail of the placement pathway for the students. It was agreed this would be a "spoke" placement of two weeks in duration, as part of a "hub[2]" placement within the Trust, where the mentor responsible for the student assessment would be located.

An educational audit was undertaken to commission the unit as a placement area for pre-registration student nurses as part of the university quality assurance process. The opportunity to select a range of competencies and professional values to achieve during the placement had been mapped out and provided a similar breadth and depth of potential learning as other placement areas in the Trust. During the audit, learning opportunities for students were identified and linked to learning outcomes within the curriculum. Mentors were invited to update their mentoring and assessment skills,[3] with a focused version of the mentor update workshop (NMC 2015). A summary of the meeting schedule is offered in figure 16

[2] The hub is the principal placement where the student's main mentor was based, the spoke is a placement area which the student will attend for one or two weeks, under the supervision of an associate mentor. The NMC require a duration of four weeks for a placement to be categorised as a hub or principal placement for the purpose of assessment.

[3] This was not required for phase one of the study as the placement was designated a "spoke" placement but good practice is that all mentors are updated annually and would be of benefit if the placement area was to be extended to a hub placement at a later date.

Date	Meeting	Venue	Present
February 2015	Initial scoping meeting	Trust site	Principle investigator (PI, Lead nurse Research, Deputy director Nursing,
March 2015	Meeting with UWL Key stakeholders	UWL Site	PI, UWL Link team, UWL lead for research, Subject head pre-registration nursing, Placements manager/
April 2015	Meetings with Trust key stakeholders	Trust site	PI, Trust placements manager, Lead nurse clinical research nurses team, mentors
July 2015	Unit audit	Trust site	PI, Trust placement manager, lead nurse
August 2015	Mentor update	Trust site	PI, mentors.
January 2016	Review of phase one – Quality Review	Trust site	PI, lead nurse, practice educators, mentors.

Figure 16: Phase one meeting schedule

A placement pathway was designed which allowed the students to work with mentors in a variety of settings, from recruiting participants to clinical trials, consenting participants, collecting and entering data and study closure. The student experience was designed to enable the student to appreciate the benefits of engaging with *research in action* and be able to subsequently use that experience to inform their own practice. Opportunities to prepare the student for these experiences and to have a better understanding of the research process as they saw it applied in practice were captured by incorporating parts of an e-learning programme, Good Clinical Practice (GCP), which is undertaken by all research staff (NIHR, 2020b), into the student timetable on their first day. All mentors and the Principal Investigator for this study had undertaken the full version of this training for research taking place in secondary care.

12 students, who had been identified for a two-week placement in the clinical research unit, received a letter (Appendix 3) by email from the Principal Investigator and the placement team, explaining why this placement pathway had been created and provided an outline of this research project. At this stage, the students were not formal participants of the study, the focus was on designing and refining the placement experience. Demographic data is outlined in figure17.

Student	Age	Male/Female	Ethic background
1	20/29	F	White British
2	20/29	F	White British
3	30/39	F	White British
4	30/39	M	Black Asian
5	20/29	F	White Irish
6	20/29	F	White British
7	20/29	F	Black Caribbean
8	20/29	F	Black African
9	20/29	F	Black African
10	30/39	F	White British
11	30/39	M	White British
12	30/39	F	Chinese

Figure 17: Demographic data for phase one student nurses.

Processes for data collection:

A mechanism to generate data was designed, to establish a baseline of student knowledge about the research unit, using a survey. All the students who had a two-week placement in the research unit during 2016/2017 completed the survey on the first morning of their placement (Appendix 3). The purpose of collecting this data was to establish how research aware the students were and was managed as part of the

placement process by the mentors. The letter (Appendix 3) explaining the purpose of the voluntary survey (to improve the student experience of a new placement pathway) highlighted the likelihood that students may not know the answers to many of the questions.

All student nurses complete placement evaluations as part of the university quality assurance process following completion of every placement and the data is used to improve the placement experience for future students. Data from the placement evaluation was reviewed after the first cohort of students had completed the spoke placement and was used to redesign the placement pathway prior to the placements of the next group of students who became the participants in phase two.

4.2 Preparation of the placement area and testing with a group of students

Phase one created the initial placement pathway for the students, working with a range of stakeholders from practice and education to design the placement experience. The placement was then tested with a group of 12 students who had previously indicated their interest in a placement in a research unit. A survey (Appendix 3) undertaken by each student on the first morning of their placement, consisted of five questions, and provided an insight into the students' understanding of the role of the clinical research nurse and the existence of the research unit within the organisation.

4.3 Survey findings

The findings from the first phase of the cycle show that more than half the students were unaware of the existence of the role of the clinical research nurse (Figure 18). When asked how many research nurses were employed in the Trust, only two of the 12 students provided the correct numerical range of research nurses in post. Similar findings emerged when asked about the activity of the clinical research team. Two of the 12 students identified the correct range of studies when asked how many on-going research studies were being managed by the research nurses. The other 10 students believed there were less than 80 studies in progress; the reality was almost twice that figure. Questions four and five explored what students thought clinical research nurses did during their average working day. The responses to the survey indicated that students had limited awareness about the role of the clinical research nurse and the function of the research unit and assumed that clinical research nurses were engaged in conducting personal research.

Questions	Answered correctly	Answered incorrectly
Existence of clinical research role	5 were aware	7 were unaware
Number of clinical research nurses in the Trust	2	10
Awareness of research activity	2	10
Understanding what clinical research nurses do within their role	31 correct answers	44 incorrect answers
What clinical research nurses do in the hospital	1 question answered correctly by all participants	5 questions answered incorrectly 20 times

Figure 18: Survey findings

Most students correctly identified the recruitment and consent processes for study participants, along with issuing medications and ward visits, as key areas of the clinical research nurse's role, demonstrating some awareness, albeit limited, of the clinical research activity underway in the Trust. Students were not aware of the "Cross Specialty Research Team"; nine students believed clinical research nurses worked in just one speciality, however, the cross-speciality teamwork across departments including the renal unit, gastroenterology, trauma and orthopaedics, the stoke unit and outpatients, all of which are student placement areas.

4.4 Student evaluations findings

Following this spoke placement, each of the 12 students completed the standard university placement evaluation. Most students evaluated the experience as "positive" or "very positive". Responses from the free text comments was organised thematically and combined with the survey findings, identifying five themes (Figure 19).

Figure 19: Findings in five themes

4.4.1 Lack of awareness of the existence of the clinical research unit and the role of the clinical research nurse.

The data provided an insight into participants awareness of the existence of the Clinical Research unit and the role of the clinical research nurse. Participants were asked about what they knew about the research unit before going on the placement. The responses were very similar to those from the pilot study two to three years earlier with most respondents stating they knew little or nothing about its existence or the role of the Clinical research nurse. The data suggests they were unaware of the work going on in research in the Trust or its value to healthcare with one participant admitting

"if I'm honest I thought negatively of it" (P5)

And another,

"To be honest I didn't have a clue [it existed] before my placement with the Research and Development team in my trust." (P7).

"but it is a hidden secret, I didn't know about it and half the people I talk to didn't either." (P5)

The data shows a variety of ways in which the research nurses are perceived by their colleagues and by the study participants.

"I worked with one of the nurses who did half time in research and half time in A&E and we came onto A&E to get some packs and stuff and they were like, oh, you're swanning around in your office job now, so they don't think they do anything!" (P5).

4.4.2 Advantages and disadvantages of a placement in the clinical research unit.

The evaluations all included positive views on the placement with students citing the experience of being involved with research and working with the research nurses as a positive learning experience.

"The abundance of information that I learned was amazing, and the staff had the time and patience to teach me in depth what I wanted to learn. This isn't often the case on busy wards" (student 1).

However, students highlighted a perceived lack of access to opportunities to achieve practice learning outcomes and improve their clinical skills as the main disadvantages of the placement.

"Not much practical skills to be gained in terms of nursing aspects as many learning outcomes were not met due to the nature of the work" (student 9).

"This placement is a great placement to learn in depth information on how research is carried out to improve healthcare as a whole, but as a 2nd year student nurse who needs vital clinical experience and patient contact, this was of no benefit" (student 4).

These responses suggest that students see value in experiencing a "non-traditional" placement area as an experience but see ward-based placements providing more opportunity for tangible patient contact which enables them to achieve learning outcomes.

4.4.3 Engagement with research

Some student nurses related their experience in the clinical research unit to their understanding of evidence-based practice and how the placement had promoted a greater engagement with the research process.

“I fully understand the reality of evidence-based practice” (student 7).

“It is a first-hand experience at seeing what 'evidence-based practice' truly means. If it was possible…I think it was an incredibly valuable learning experience for me as a student” (student 7).

These comments highlight the need for students to understand and experience *research in action* and the value that such an experience brings to bridging the gap between research learned in university and the subsequent application of that learning in the practice area.

4.4.4 Length of placement

Most students felt the placement should be shorter in duration and more aligned with opportunities to achieve learning outcomes, essential skills and professional values.

“I would highly recommend this placement for third year student nurse for a short time period only, as there was a lot of learning outcomes which would not be possible to achieve in the research placement but would work better if it was shorter than 6 weeks” (student 9).

Again, the data highlighted the priority which students assigned to achievement of learning outcomes during a placement.

4.4.5 Observations of excellence in practice.

Student responses also provided examples of excellence in communication and team working and identified unique learning opportunities to observe and practice communication skills.

"It highlights and raises the profile of research. Excellent communication and MDT working are demonstrated giving the student opportunities to partake in various experiences not found anywhere else" (student 11).

"I have been able to develop my communication skills in a way I wouldn't have experienced in any ward-based placement" (student 7).

4.5 Conclusion

The first phase of the study was designed to gain an insight into student nurses' understanding of the work carried out in the clinical research unit and to test a short two week spoke placement in the unit. It started to generate an awareness of research activity within the Trust and provided contextual data to guide the development of a set of headings for the diary for the next phase of the cycle (Figure 13). Following review of the data and consultation with the stakeholders, the placement was changed from a spoke placement to a full hub placement of four weeks, the learning schedule was redesigned, a more comprehensive induction pack was compiled, and further mentor training was offered to enable mentors to take on the role of assessor to the students.

STUDENT DIARY [PICK THE DATE]

Did you hear the words “Research” or “evidence-based practice” used today?

IN WHAT CONTEXT?

Did you use the words “Research” or evidence-based practice today?

PLEASE EXPLAIN

Did you see anything in practice that you think is based on evidence or research?

CAN YOU GIVE SOME EXPAMPLES?

Did you see anything that you don’t believe there is evidence for?

CAN YOU GIVE SOME EXAMPLES?

Did you see or do anything in practice that your placement in the research unit has helped you understand?

Anything else that might help me understand the impact your placement in the research unit has on your practice?

Figure 20: Student diary template

Chapter five: Phase two of the action research cycle - The participant diaries and interviews completed after a placement in the clinical research unit.

5.0 Introduction

The purpose of this phase was to use the evaluation data from phase one to revisit the design of the placement pathway. Phase two of the study collected data on the effect the placement in the clinical research unit had on student nurses' subsequent placements, in the context of the study aims; *assessing* and *engagement* with research and *confidence* to apply it to practice. Data for phase two was collected over a one-year period, starting in September 2017, initially using a participant diary (Figure 20) as the data collection tool, followed by a one-to-one interview. Eight students completed the full hub placement and were invited to join the study following that placement. Five students returned the diary, one student indicated a willingness to be part of the study but had not had time to complete the diary and asked to be interviewed, resulting in five diaries and six interviews making up the data set for this phase.

The purpose of the diary was to create focused entries which demonstrated how the students had been able to apply their learning from their research placement to practice in other clinical settings. This was followed by an interview, using a set of guiding questions. The purpose of the interview was to provide an in-depth, holistic understanding of the participants' diary entries and experiences, after their research placement. Both the diary and the interview created an opportunity to capture examples of participants *assessment* and *engagement* with research and to assess how *confident* they were to apply learning from the clinical research unit to their practice. The interview method allowed data to be collected in the natural setting and allowed for the adjustment and the sequencing of the questions based on the

responses of the participants. This was useful as the study was exploring impact and had a different meaning for each participant and provided scope to explore and delve into participant responses to unpick emerging themes. As a semi-structured interview, it had the benefit of being flexible and allowed the interviewer to adapt the research instrument to the respondent's level of understanding and articulacy.

5.1 Participants

In this phase of the study, all eight of the students who completed the redesigned, four-week hub placement in the clinical research unit were invited to participate in the study. The invitation to participate in the study was sent via the University Alumni Association through email. Six students agreed to participate in the study. Demographic data is outlined in figure 21.

Participant	Age	Male/Female	Ethic background
1	20/29	F	White British
2	30/35	F	Black Caribbean
3	20/29	F	White British
4	30/39	M	White British
5	20/29	F	White British
6	30/39	F	Chinese

Figure 21: Demographics for the six study participants

5.2 Data collection – Diary and interview

An e-diary was created using a free app "Grid Diary", creating a template for participants to record experiences of assessing and engaging with research and demonstrating confidence in applying research to their practice (example Appendix 4). The grid was designed to allow participants to add comments daily in each of nine sections which focused on their research awareness and how their knowledge and

experience of being on placement in the research unit affected their practice on subsequent placements. Participants had the option of using the template (figure 13 in chapter four) electronically or printing it for completion by hand. Part of the rationale for using it in this project was for ease of access; all participants had smart phones or tablets so participants could access the tool, either on a personal computer or mobile device.

Following completion of the diary, participants were invited to an interview. Loftland et al.'s (2006) model was used to create each question prior to the interviews. It started with identifying "puzzlements"; what was interesting about the research question, contextualised within a "cultural endowment" by spreading the range of enquiry amongst the participants. The next stage arranged the puzzlements into clusters; in this instance into the three behaviours which the study was seeking to explore (*assessing clinical research, engagement with research* and *confidence to apply evidence to practice*). The final step was the creation of "probes"; these were reminders to the researcher to pursue subtopics in each interview and created a guided conversation. The use of the probes ensured participants understanding of the question could be checked where answers were not forthcoming by rephrasing questions at the end of the interview.

Participants had completed at least one placement after their placement in the clinical research unit to provide opportunity for them to apply their learning to another area. Participants had the option to attend a face-to-face interview or to participate electronically using Skype, all chose to attend in person. The interviews took place on the university campus which was in the same town as the placement area. Participants expected the interviews to last between 20 and 30 mins, the shortest interview lasted 20 minutes and the longest lasted 30 minutes. All interviews were recorded digitally,

and the interviews were transcribed immediately afterwards, and the digital recording erased. Transcripts were stored on a secured server using the university storage.

The target sample for the study was to interview all eight of the students, and as this study was using an iterative approach to the interview process, it was possible to determine a data saturation point where no new themes were emerging after the sixth interview.

Ethics:

A participant information sheet (Appendix 7) was sent to all those who agreed to participate, and consent was sought (Appendix 8) prior to participation in the study. Participants were invited to discuss the study and their participation in it with the Principal Investigator, to discuss any aspect of the study or ask specific questions. Consent forms were signed and retained as scanned documents on the secure university server. The participation information sheets were reviewed prior to each interview and all participants understood that they could withdraw from completing the diary, attending the interview or the research process at any time.

The diary data was organised thematically and led to the creation of an interview schedule (Figure 22) which was then mapped to the study objectives to ensure the data collection process covered all three study domains, *assessing clinical research, engagement with research* and *confidence to apply evidence to practice.*

The Loftland (2006) model was again used to create the interview schedule, using the themes from the student diaries and interviews to create the “puzzlements” in the first instance, which were then arranged into three “clusters”. A final list of prompts was created to ensure the participants understanding of the question could be checked by rephrasing questions at the end of the interview. All five participants contributed

answers to each question and provided insights into the mentor perspective of students' engagement with research activity.

1	Tell me a little about your experience in the research unit.
2	How did you learn about research in the University?
3	Did you hear the words "evidence-based practice"?
4	Can you recall evidence-based practice interventions prior to the placement?
5	Focus on emerging issues from the diary.
6	Explore staff and mentors who work in research unit
7	Explore how experience in CRU has impacted on subsequent experience in practice
8	What is your understanding of the theory practice gap?
9	How do you know if something is based on evidence?
10	How would you recognise patients who are participants in research studies?
11	How would you use research to inform your practice?
12	What do you understand about the role of the research nurse?

Figure 22: Questions for interviews

5.3 Data presentation

Following completion of the diary and the interview, the data was initially coded to 22 nodes (Figure 23) and was then re-coded to seven themes (Figure 24) each of which will be discussed in the context of the study's three aims; *assessing clinical research*, *engagement with research* and *confidence to apply evidence to practice*.

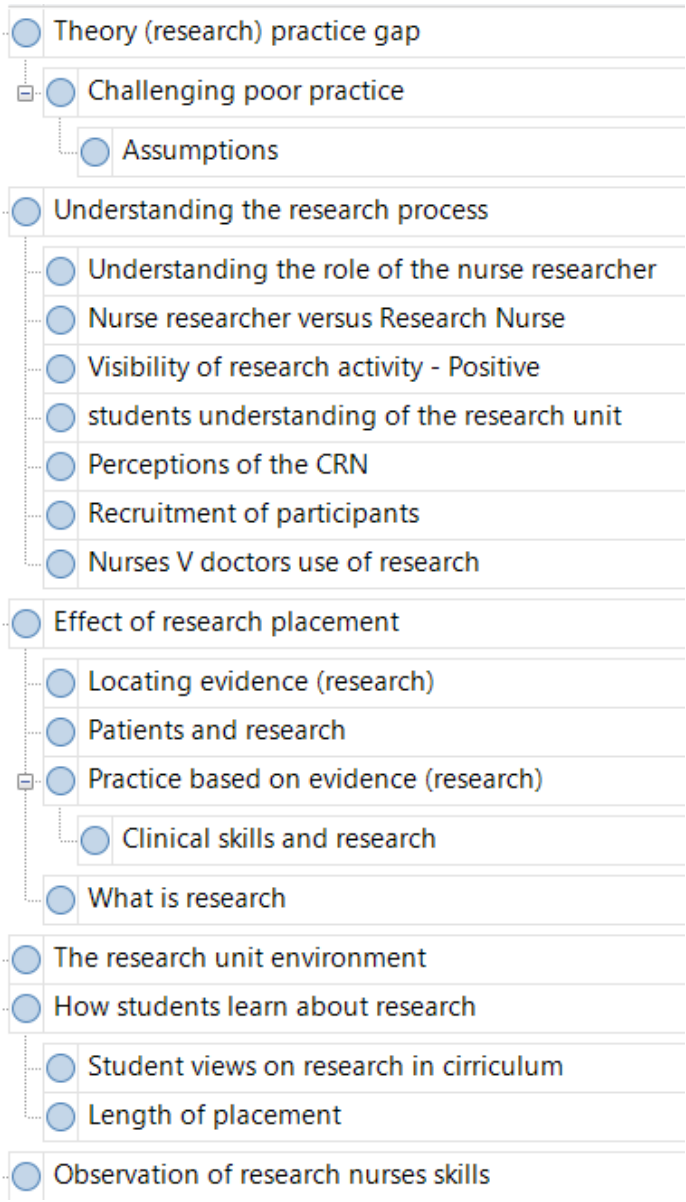


Figure 23: NVivo initial node coding table

Figure 24: Themes identified from coding of diary and interview data (phase two).

5.3.1 Concepts of evidence and research in practice.

The data shows that the language of evidence-based practice and research is used consistently in clinical practice, with many examples of conversations which the participants believed were directly based on evidence or research.

"Yes – in regard to the treatment of dementia due to an aggressive patient on the ward with Alzheimer's (P1).

"This shift was my study day for Immediate Life Support. The words research and evidence practice was used various times to explain the evidence used in practice" (P5).

However, all the participants referred to examples where they had heard the words "evidence-based practice" or "research" used by other healthcare professionals, rather than using these words themselves.

5.3.2 Accepting or challenging practice.

The participants drew on practice examples to show how skills and procedures they had learned or were using in practice were based on evidence. They also referred to equipment they had seen in practice which they believed had been developed as a result of research. Students referred to examples of practice they had observed or to procedures they had seen, which they believed were based on evidence.

"…with my mentor I conducted a nurse led swallow for an elderly patient …The guidelines for the nurse led swallow procedure are based on extensive research into the safest way to conduct a swallow assessment on a vulnerable person…Identifying the correct and safest way for a nurse to administer this assessment" (P1).

The data suggested that students who see practice based on clinical guidelines perceive that as evidence-based practice and research. None of the participants identified specific research which underpinned any guideline, and some assumptions were made:

"…must have been based on a variety of research papers and practices" (P3).

Participants gave examples of how conversations with their mentors helped them provide what they considered evidence-based information to reassure patients about decisions about their care.

"We had a patient who was adamant that they [the patient's wounds] needed to be redressed every other day. However, the clinical nurse specialist advised me this wouldn't encourage optimal healing, as we were disturbing the wound more regularly than they needed to be. Although we did not use the words research or evidence-based practice, I believe that this is most definitely based on research and evidence" (P5).

Participants also talked about practice training events[4] and made consistent reference to what they perceived as evidence and research when promoting new ways of working and adjusting traditional and established practices where new evidence has emerged.

"Cleaning patients' hands before taking a blood glucose reading…Priming syringe with 2 units specifically…Alternating sites of administration…Leaving needle depressed for 10 seconds before removing" (P3).

Wound dressings were also referred to as examples of care the participants had observed, which they viewed as being based on research.

"Types of primary and secondary dressings for different types of wounds and ulcers…In particular current EBP regarding hydrocolloid, foam, algenate or hydrofibre primary dressings" (P3).

Participants were able to articulate examples of equipment that was used in practice which they believed had a strong evidence base.

"Yes: the use of 'twiddle muffs' for dementia patients. I have personally seen a range of research papers surrounding the use of various things in the treatment of dementia aggression" (P1).

The data also shows examples of practice which the participants did not believe was based on evidence. Three participants articulated concerns.

"I had a patient who had very bad moisture damage on his sacrum due to chronic diarrhoea, and one of my colleagues was adamant that a thin layer of a cream called

[4] Student nurses attend Trust training on blood sugar testing and care of diabetes patients.

“metanium” was the best method of treatment, despite advice from the tissue viability team advising us previously that another cream called “proshield” was better” (P5).

However, despite this participant recognising poor practice, there was a lack of confidence to challenge this or to pursue the evidence or research which might corroborate this.

“As this was a nightshift, I often saw mobile patients being given bedpans or commodes rather than assisted to the toilet. Whilst I understand this is done because people are busy I do feel there must be research somewhere that suggested it’s detrimental to recovery to allow people to be ‘lazy’ or choose the easier option because staff are too busy/can’t be bothered to help. I do believe there is a lack of evidence to suggest using commodes for patients who don’t require them is effective for recovery but I wouldn’t be sure without searching databases, myself, and certainly wouldn’t bring it up with any staff on the ward” (P1).

This participant appears to have been involved in moving and handling practices which they viewed as incorrect but does not offer any challenge to the practice.

“As seen on a lot of wards previously the lack of using slide sheets for moving patients. I often saw (or was asked to assist with) incorrect transfers of patients for example using bed sheets to yank patients up the bed rather than rolling and sliding with slide sheets” (P1).

There are issues with team culture and hierarchy which persist in healthcare and despite ongoing work with “Freedom to speak up” campaigns (Francis, 2015) robust mechanisms to support students, when they have a moral obligation to report concerns, are still not sufficiently transparent.

5.3.3 Influence of research placement.

Exploring the effect that their placement in the clinical research unit had on their subsequent practice, participants indicated a much better understanding of the research process and how this happens in a large foundation hospital Trust.

"I feel that my research placement has given me a lot more understanding of the research process and I have a lot more respect for the importance of evidence-based practice" (P1).

"I think having completed the placement, made me really fully aware of its importance…" (P5).

Participants reported an increase in confidence and indicates that they would be more willing to challenge poor practice because they understand and have seen first-hand how research evidence is generated.

"It has given me loads of confidence to question what I see and to challenge practice" (P3).

Mechanisms for sustaining the learning which had taken place in the clinical research unit were also evident.

"I thought about the impact of research and EBP EVERY DAY, it hugely increased my awareness and was always within my thinking. I have downloaded apps on my phone which I use EVERY SINGLE Day" (P3).

5.3.4 Assessing clinical research

Participants were asked about how they learned about research and their understanding of how evidence is created.

"In the university you get taught to understand research and the processes that are behind what happens and you learn more about the end product of research I feel whereas with the placement you learn the whole process, what happens before a project even starts right through to what's happened so the end product and how research is being shaping, so it gives you a true all round experience of research" (P6).

Participants saw the value in seeing the research process first-hand and related that to their understanding of evidence-based practice.

"You get to see why research takes place and how it comes about, whereas as a student you see the research paper at the end of the day and you don't really understand the whole process although we do it in the university, it's, until you have actually seen it, face to face and you see all the meetings and all the paperwork and all the tooing and froing and changes that you don't understand the full process, you get to see the before part of why it then effects evidence-based practice, the decisions that we have to make every day" (P6).

There is a suggestion in the data that assessing clinical research may not be grounded in rigorous processes of critical appraisal.

"Looking at what we are going to do in year three, doing research takes on a whole new meaning to just looking something up on Google" (P3).

"…I checked on Google…" (P8).

"…towards the internet, just google it…" (P1)

"…looked up evidence on the computer on google…(P3)

Analysis of participant responses shows that those students became very familiar with how research data is generated during the placement in the clinical research unit whilst identifying that at the start of this placement, this was unknown territory.

"I think I'm the only one in my class that's been on the research placement, so I think it did definitely, did give me a better understanding" (P7).

"I'd probably just think of evidence-based practice as a word, sometimes you need to see it to understand it" (P5).

Whilst evidence-based practice and research methodology has been embedded in nursing since the work of Florence Nightingale during the Crimean War in the 1850's and laterally formalised in the student nurse curriculum in Project 2000 (UKCC, 1986) participants did not make the connection between the way in which these subjects are taught, and the way research happens in practice.

5.3.5 Engagement with research

The diary and interview data showed a very limited awareness of the existence of the clinical research unit and the role of the clinical research nurse. Participants were asked about what they knew about the research unit before going on the placement. The responses were very similar to those from phase one with most respondents stating they knew little or nothing about its existence or the role of the clinical research nurse. This suggested students were unaware of the research work going on in the Trust or the value it adds to healthcare, with one participant admitting:

"If I'm honest I thought negatively of it" (P5).

"To be honest I didn't have a clue [it existed] before my placement with the research and development team in my Trust" (P7).

"…but it is a hidden secret, I didn't know about it and half the people I talk to didn't either" (P7).

The students revealed a variety of ways in which the research nurses are perceived by their colleagues and by the study participants.

"I worked with one of the nurses who did half time in research and half time in A&E and we came onto A&E to get some packs and stuff and they were like, oh, you're swanning around in your office job now, so they don't think they do anything!" (P5).

"they just disappear off and sit in an office (laughter) type of role, because they're not activity seen in clinical practice I think, some people perceive them as not a real nurse" (P1).

Participants commented throughout the data on the skills they observed clinical research nurses using when communicating with patients, families and other staff members.

"They all have really great communication skills, you know they were all really good at talking to the patients and explaining everything, I was really impressed with that and so I was able to observe that and it's really good the way they don't persuade you know or influence the patients when they are consenting them, they really do just let it be their choice" (P3).

This suggested that engagement with research activity is ad hoc and depends heavily on the placement pathway design to enable students to actively engage with clinical research and to observe the role of the clinical research nurse.

5.3.6 Confidence to apply evidence to practice

Some participants who had placements in the research unit appeared to be willing to challenge poor practice, they referred to increased confidence and understanding of processes for creating policy and guidance and describe rationale-based decision making.

"There's always more than one truth, and more than one idea and not just always accepting what you are told and thinking about what else there, what other evidence is there, just more wider thinking really" (P3).

"…having confidence to ask about why we are doing certain things, and what evidence there is to back it up, thinking more about … how the evidence has taken me to do something that I'm doing… I think beforehand I don't think I was confident enough to ask why we're doing certain things" (P6).

Participants' reflection on clinical practice time after the research unit placement appeared to have had had a dual effect; their increased confidence to ask questions and an improved awareness of research in practice. Whilst participants suggested their experience gave them confidence to ask questions, it was not explicit that this then gave them the confidence to challenge practice.

5.3.7 Structure of future placements

As this phase of the study ended, participants were asked for views on how the use of clinical research units could fit with the student placement and practice-based learning. Many views were expressed including the length of the placement and the way in which learning outcomes could be achieved. Participants' views varied across the group as to what the ideal length of the placement should be, the middle ground,

expressed by two participants, suggested that the length of the placement should be between four and five weeks (P5 and P8).

At the beginning of each practice placement, students are required to identify a range of essential skills, with their mentor, which they will focus on developing during the placement. Many of these are practical skills, for example management of medicines, managing patient hygiene/hydration/nutritional needs and managing devices used to deliver patient care. Reflecting on the disadvantages of the placement, there was a common theme of lack of opportunity to achieve essential skills and to practice clinical skills. However, there were skills that clearly were developed, for example excellence in communications and providing detailed explanations in accessible formats to patients, however these were not perceived as “clinical skills”.

“Lack of clinical skills for me, you always want to learn your clinical skills especially I think as a third-year student I would have preferred to have done it in my second year just coz third year you are trying to accelerate your clinical learning to hit the ground running when you become qualified and I guess that’s the only thing negative that I have” (P6).

“I think I got one thing signed off the entire placement, so I think maybe if research is going to be used in future … it needs to reflect that a little bit,…the major drawback for people wanting to go, they don’t achieve any of their outcomes” (P7).

However, several participants endorsed the value of the placement and the importance of all students having access that experience.

“I think even for the first-year students would benefit from a research placement because they will start understanding a bit more the importance of gathering their

evidence straight into their dissertation and ready for other modules throughout their university life and beyond really" (P6).

With a dynamic pre-registration nursing curriculum, the challenge is to uncover new approaches to how students learn about research and how to create a research aware nursing workforce.

5.4 Conclusion

The aim of this study was to evaluate the use of a clinical research unit as a placement area for student nurses by exploring three distinct elements; *assessing clinical research*, *engagement with research* and *confidence to apply evidence to practice*. It did this by creating one, overarching, action research cycle, consisting of three phases. The first phase of the cycle was the design of the placement and the testing of it with the first group of students. The second phase followed up students who attended a revised placement, and after that placement, completed diaries and attended interviews to explore the impact the research placement had on their subsequent *assessment*, *engagement* and *confidence* with research. The third phase of the cycle was designed to triangulate the data findings by including the views of the mentors and seeking further clarification on issues and themes raised in the first and second phase of the cycle. This was conducted using a mentor focus group of five mentors which will be described in the next chapter.

Chapter six: Phase three of the action research cycle – the mentor focus group

6.0 Introduction

This phase of the study was designed to capture the views of the mentors of the students who had taken part in phases one and two and to gain more clarity on the issues emerging from early analysis of the student generated data and was carried out in May 2019. The research question was seeking to understand how the placement experience in a clinical research unit impacted on student nurses' ability to assess and engage with research in practice. As a supervisory group, the community of mentors were well placed to observe this first-hand and a focus group created a forum for sharing and prompting observations which individual interviews may not. Eight students had been mentored in the preceding 24 months by the five mentors who became the focus group participants. A further advantage of including a focus group as a data collection method for this project was the opportunity to recognise the interaction between participants. The date of the focus group was circulated four weeks in advance of the meeting and reminders were sent by email and phone.

6.1 Participants

All mentors who were involved with supporting students on this placement were invited to the focus group. Due to the number of mentors and the timescale of this project, one focus group was facilitated. At the time of this phase of the data collection, there were five qualified, live[5] mentors in the clinical research unit and each of these rotated the role as mentor to new students. The standard practice in the Trust is to allocate a

[5] A live mentor at the time of the study was one who is active on the organisation's database of live mentors and who met the NMC standards for mentoring and assessing in practice at that time.

main mentor (who completes the student assessment) and a co-mentor, who is also a qualified mentor and can supervise the student when the main mentor is not available. Given the wide range of mentors the student is likely to work alongside, the views of the mentors on the research question had the potential to generate a rich source of data. Demographic data is outlined in Figure 25.

Mentor	Age	Male/Female	Ethic background
1	50/59	F	White British
2	30/39	F	White British
3	20/29	F	White British
4	50/59	F	White British
5	60/69	F	White British

Figure 25: Demographic data

6.2 Data collection.

Each participant received a Mentor focus group Participant Information sheet (Appendix 9) and a Mentor Focus Group consent form (Appendix 10) prior to the meeting. Consent forms were returned by email and stored on university secure storage. The focus group took place within the Trust (in a private meeting room) outside of the clinical research unit and was facilitated through a telephone conference call using a speaker phone as previous scheduled dates had been cancelled due to participants' work pressures.

6.3 Findings.

Five mentors took part in the focus group. 10 questions were created to explore the mentors' views on the themes identified in the data, grouped under three categories; visibility of research in the Trust, exploring student observations of excellence in

communication, and consideration of the structure and length of future placements for student nurses. The focus group data was analysed thematically and identified three themes (Figure 26).

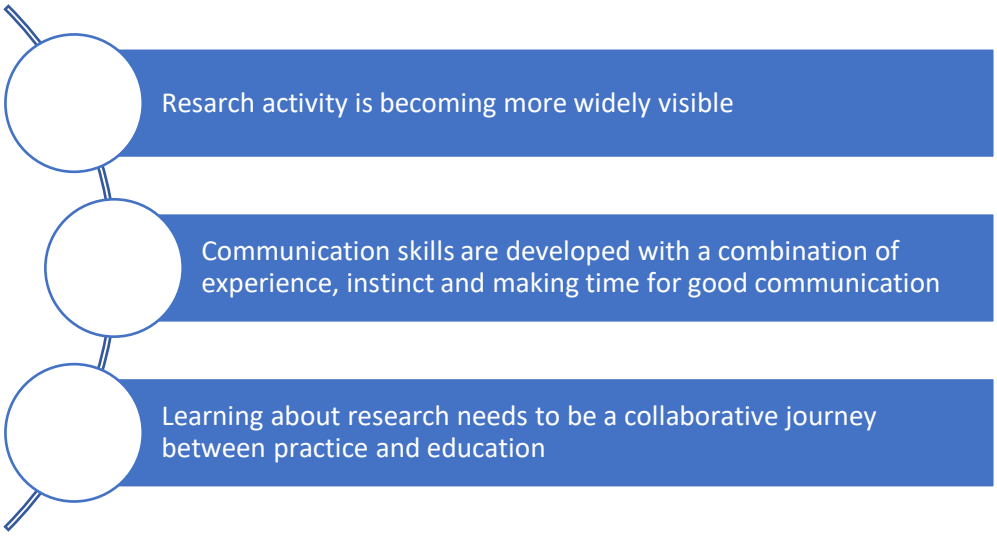


Figure 26: Themes identified from the mentor focus group.

6.3.1 Research activity is becoming more widely visible

The mentors were asked about the visibility of the clinical research unit within the Trust, and why students were not always aware of its existence. They provided a variety of possible reasons and solutions for this.

"The type of research that we deliver here in this unit and other research facilities have working, you don't teach that sort of research in university" (M1).

There appears to be a suggestion that "research" taught in university is different to the evidence being used in practice. It maybe that that the process of how data is collected and then used to underpin practice is perceived by practice colleagues as not being explicitly taught in the undergraduate curriculum and this omission is leading to a lack of clarity around the total research generation process. The mentors suggested the

lack of visibility was due to the work of the research nurses not being part of the student nurse course.

The mentor also suggested that:

"…because it's a relatively new [placement] area, has just not been taught in university setting and then it's not been part of nursing courses or student nurse courses" (M1).

The group were very clear that the onus for improving this needed to come from the university,

"…certainly, taking it into the university, actually taking the concept to the students when they are still students in the classroom" (M1).

The group was asked about changing perceptions; from the participant data reviewed prior to the focus group, there was a suggestion that placements in the clinical research unit could be perceived as boring and "non- clinical". They were asked how that perception could be changed to make the prospect of a placement in a research unit a more attractive one to student nurses. The view of the mentors was this needed to be embedded in the curriculum and become a joint endeavour between placements and higher education institutions.

"I think it has to go back into the university classroom and actually I think an awareness session of what research is, and what clinical research is more importantly, I think that would get away from, it's not just all form filling and boring" (M1).

Another mentor followed this up with highlighting the growing visibility of research opportunities.

"GP practices are, certainly in [this] area, are beginning to pop up like mushrooms and they're actually really quite keen to do research so it is getting out into the community,

it's certainly one of the growth areas that general practice is going to be much more research active than it has been historically, they've realised there is money in it…" (M2).

The focus group clearly viewed the responsibility of improving the visibility of the research unit lying with the university in the first instance. Some assumptions emerged regarding the way research education is delivered in the curriculum which potentially could exacerbate the perceived research/practice gap. However, visibility of research units and their validity in generating evidence-based practice is growing and there is an enthusiasm within the clinical research nurse community to embrace development and encourage engagement with higher education institutions and student nurses.

6.3.2 Communication skills are developed with a combination of experience, instinct and making time for good communication.

One of the aims of the project was promoting engagement with research, therefore links with skills development which could be transferrable across domains and disciplines were explored. Mentors were asked how they developed the excellent communication skills which were commented on by participants in phases two and three of the study and invited to share any insights into how these could be replicated. Time and experience were identified as the key elements to excellent in communication.

"It usually helps that you've got a little bit more time to actually communicate everything that you need to communicate to the patient" (M1).

"We weren't newly qualified nurses when we came into the research team, we all had a lot of experience in various areas first, so yes, you might have had fairly good

communication skills to start with but you become wiser as you get older and all the different experiences we have had" (M2).

Whilst the group welcomed the positive feedback on their communication skills, they raised concerns about how the clinical research nurse was perceived by student nurses and others within their organisation, when carrying out their role.

"…if they thought it was taking them away from being at the bedside … the job is not seen as purely clinical, it's … that mix of attention to detail, of form filling, of data entry and searching and screening patients, … I think if we were able to present that in the university … then they would have a better understanding of what they would be expected to do when they come and do a placement in research" (M1).

This was followed up by providing an excerpt (below) from an interview with P1 (section 5.3.5) where a participant recalls visiting A&E with her mentor who was a nurse on the clinical research unit.

"I remember when I was a student I worked with one of the nurses who did half time in research and half time in A&E and we came onto A&E to get some packs and stuff and they were like, oh, you're swanning around in your office job now, so they don't think they do anything!" (P5).

The focus group were asked for their response to the excerpt and the perceptions that other clinical staff and students may have of them.

"In the NHS there's this assumption that any job sat down is not as important as the job you do stood up" (M3).

This very powerful statement sends out a clear message that a prevailing culture of needing to be "seen to be doing" is still active in healthcare and is supported by data emerging from the student interview data. Nursing progressed in the early part of this

century from being an apprenticeship/training type profession to a graduate profession which gave equal emphasis to academic and practice learning. It does not depend on previous models of novice to expert but focuses on achievement of competency and creating innovative, evidence-based practitioners. The assertation that registrants who carry out their role anywhere other than at the side of the patient has less value is concerning.

6.3.3 Learning about research needs to be a collaborative journey between practice and education

The final questions focused on the student experience during the placement and asked focus group members about the length of the placement, explaining that some of the participants had suggested five or six weeks maybe too long.

"Five to six weeks is probably just about long enough" (M1).

"It's a little bit different for every student I think but I think, less than four weeks would be too little" (M3).

The mentors agreed that six weeks was an appropriate duration, however, one mentor voiced a concern that had not previously emerged explicitly in the data, that some student nurses looked bored, didn't enjoy the placement and thought it was a waste of time.

"…definitely it depends on the student, some of them students were incredibly engaged and you know, you felt like the training was too short and others you just, weren't really that engaged and looked a bit bored and didn't really ask the questions and didn't look like they were actually enjoying the placement and thought it was a waste of time" (M2).

Finally, the mentors were asked to consider how it can be ensured that all student nurses get exposure to the research process in action, given that placements in the research unit are not likely to be extendable to every student given their placement capacity. Some participants felt the ownership should be with the university and should be classroom based.

"A classroom session you know, an afternoon or so about research nurses would be a start so when they you know they could actually see some of the theory behind it" (M1).

However, other participants took a wider view,

"…research is everybody's business, it's something that should actually be part and parcel of the NHS fabric ..." (M4).

"… research is something that should be on every ward, that every nurse should know about it …" (M5).

6.4 Summary of mentor data

Clearly there is a change in the research landscape and a recognition of the need to raise awareness of research activity within NHS organisations. The role of the clinical research nurse is being further defined and career pathways for research nurses are raising the profile of research throughout the NHS. Research nurses acknowledge the need for understanding of the research process to be embedded in the student nurses' curriculum and appear keen to collaborate. How clinical research nurses are perceived by peers and how they have acknowledged excellence in communication skills is also prevalent in the findings. Whilst no new themes emerged from the mentor focus group data, the views of the mentor group contribute to both the conceptualization of the data and the discussion which follows in chapter seven.

6.5 Conclusion

The first phases of the cycle identified five themes from the student survey and student data. These themes which were used to design the data collection instruments for phase two where seven themes were identified. These were explored and validated in phase three, where the mentor focus group data provided three further themes.

Whilst there are many commonalities of findings in the various phases of the study, each phase has generated a different perspective and contributes to the overall findings of the study. Phase one found that student nurses had very limited understanding of the role of the clinical research nurse, neither did they have an awareness of the existence of a clinical research unit and how it was operationalised within the Trust. However, the data showed that most student nurses who attended a placement in the clinical research unit rated the experience positively. Phase two data confirmed the language of research and evidence-based practice is widely used in the practice area but there is a dependence on clinical guidelines and an assumption that these are evidence-based. There was minimal articulation of primary research sources, however students were able to draw on some previous reading to support interventions they believed were evidence-based. Initially there appeared to be a fear around challenging poor practice but students later articulated their growing confidence to ask questions with their greater understanding of the research process and the understanding of the work of the clinical research unit. There is a suggested dichotomy between how research is taught to student nurses in university and their experience of research generation in practice. There is also confusion around the titles of clinical research nurse versus nurse researcher.

Whilst there was an overall endorsement of the value and appropriateness of exposure to the clinical research unit for all student nurses at some point in their student journey there remains some issues to do with lack of opportunity to practice essential clinical skills development that must be addressed. Phase three provided the mentors' perspective and acknowledged earlier findings around lack of clarity of the research nurse's role and the need for universities to take the lead in preparing student nurses for a research placement. Each of these phases was due to be replicated in a second action research cycle, however, with the global pandemic, the clinical research unit activity was ceased, all staff were redeployed to front line services and it was not possible to repeat the cycle. The findings of all three phases of the action research cycle were combined and the synthesised findings are analysed and discussed in chapter seven

Figure 27: Themes from each of the three phases of the cycle.

Chapter seven – Analysis and discussion

7.0 Introduction

This chapter will analyse and discuss the findings of the study, in the context of the three study aims which were used to evaluate the impact of a placement in a clinical research unit, how students *assess clinical research*, *engage with research* and how *confident* they are *to apply evidence to practice*. The chapter is structured using the themes identified from the data and the application of Roland's (2015) 7I's conceptual framework (Figure 14, introduced in chapter three). Used to map out the identified themes from the data, a conceptual framework represents a synthesis of the cumulative knowledge and observations which emerged from each phase of the study. Figure 27 shows the themes identified in the three phases of the study and the conceptual framework categorises these themes within an evaluative structure (Figure 28). These themes are explored in the context of current literature and practices driving healthcare and healthcare education.

7.1 Interpretation of Roland's 7I conceptual framework

Roland's (2015) conceptual framework was introduced in chapter three. Designed as a framework for evaluating educational interventions with groups of junior doctors, it adopts a parallel rather than a traditional hierarchical structure (Botek, 2018) and presents an alternative to models based on the traditional Kirkpatrick and Kirkpatrick (2010) hierarchical approach. The 7I's framework (Roland, 2015) is constructed using 7 linearly sequenced domains and allows for the conceptualisation of the effects of an intervention. Roland (2015) suggested this allows for a more robust evaluation of educational initiatives. In his original study, the model was used to evaluate an e-learning package (referred to as the intervention) which was used to deliver a course

on paediatric fever management for doctors. The 7I's model (Roland 2015) starts with *Interaction*, where he assessed the interaction the students had with the learning package, examining the degree to which they engaged with the intervention and how satisfied they were with it. In the *Interface* stage, he considered access; the extent to which the students could access the modalities is considered (software, video and audio access) of the e-learning package. In the *Instruction* phase, Roland (2015) catalogued details of the intervention itself, so that future comparisons between practice changing interventions could be made. The *Ideation* and *Integration* domains established perceptions of perceived improvement and actual improvement. *Implementation* evaluated the extent to which change could be demonstrated across individuals or departments and finally *Improvement* considered the extent to which the instruction has resulted in improvements to care.

Whilst the primary aim of this study was also to evaluate a learning package, some modifications needed to be made to the Roland 7I's model (Roland, 2015) to allow recommendations to be made as to how this placement could be taken forward as a continuous curricular option. There was less focus on the *Interaction*, *Interface* and *Instruction* elements of the framework as students did not have an option to attend/not attend placement and it was a course requirement to engage with the intervention. Roland's model (Roland, 2015) uses a quantitative analysis to determine measures of *Ideation,* however this study acknowledges the value of qualitative data in addressing the study aims, allowing for reporting of the student voice in tandem with placement development. Roland also acknowledges this and suggested that qualitative data would further validate the framework by providing insights into students' decision-making process. However, the overarching principle of allowing the effects of an

intervention (the placement in the clinical research unit) to be conceptualised ultimately justified the use of the model to create a synthesis of findings for this study.

The study objectives are addressed by examining participants' *assessment of clinical research*, *engagement with clinical research* and *application of evidence to practice* across all seven domains. Application of the framework provides a cumulative overview of the findings from the data and a synthesis of the student journey through the clinical research unit placement. Each of the 7I's framework domains will be presented separately and provides context for analysis of the 15 emergent themes described in chapter four.

7.2. Interaction

This domain gives opportunity to evaluate the degree to which participants engaged with and were satisfied with the placement. Roland uses this domain to describe how his participants engaged with the e-learning package. In this study, student engagement with the clinical research unit was non-negotiable; students were required to attend the placement, nonattendance was not an option. However, engagement with the intervention may have been hindered by students' lack of awareness of the existence of the research unit and student satisfaction with the intervention varied.

7.2.1 Research – a hidden gem

Whilst student nurses were able to engage with the placement by attending the placement physically, it emerged that a potential barrier to engagement was the lack of awareness of the clinical research nurse role, and the lack of knowledge of the existence of the clinical research unit. This identified possible gaps in how and what students learn about research. Similarly, students had a lack of awareness of the role

of the clinical research nurse, which has implications for workforce planning, as the NHS becomes an increasingly research driven organisation and the work of the NIHR is dependent on recruiting competent registrants to lead and advocate the research process in practice. There was a continuance of this theme which highlights student nurses' lack of awareness of the existence of the clinical research unit in the Trust. Whilst some were vaguely aware that there was research activity somewhere, none were able to identify where the unit was located. Several participants stated that they did not know about it prior to their placement and several suggesting that a lot of research activity was unknown to both them and their fellow students. During Phase three (the mentor focus group) of the study, the mentors acknowledged this and provided an update. The lack of visibility of the research department had been recognised within the Trust and work was in hand to address that with clearer signage in the Trust buildings and clearer identification on staff badges and uniforms to indicate their roles within the clinical research unit. However, their presence may to continue to be covert if mechanisms to create more transparency are not embedded into student curricula.

7.2.2. Research placement is not for all.

Satisfaction with the research placement was mixed; the participants who agreed to participate in the study were very enthusiastic about their experience, however from the student evaluations and the feedback from the mentor focus group, it was clear that some student nurses did not see the same value in the placement. Phase one (the student evaluation data), featured several negative views on the placement suggesting it may not be suitable for every student and citing the lack of clinical skills experience and the lack of patient care as the major areas of concern. However, Phase two (the student diaries and interviews) of the study showed a much more

positive student experience of the research placement, with some exemplary evaluations from students. Participants who viewed the placement as a positive experience were able to articulate the skills and knowledge which the experience had provided them with in relation to assessing research, stating that the experience had given them a better understanding and a clearer insight into how research studies are constructed and carried out in practice. However, one mentor shared an observation of two students who did not appear to be engaging with the placement and it appeared that not every student appreciated the value of the experience and some students prioritised completing their Practice Assessment Document[6]. Whilst the placement had been designed to give students opportunity to achieve essential skills and professional values during the placement, the data showed that these opportunities were perceived by some students as minimal. This raises issues around expectations and whether the overall design of the placement was fit for purpose. Whilst it is acknowledged that not every student will engage positively with every placement, there is a need for placement areas to meet student expectations and provide relevant opportunity to learn from their experience.

7.2.3 Perceptions of learning opportunities.

A further measure of student engagement and satisfaction with the intervention was identified through exploring students' perceptions of the available learning opportunities in the clinical research unit. A range of both positive and negative elements to the placement were reported; positive experiences included exposure to the research process in action, observations of excellence in communication skills and

[6] Practice Assessment Document is a record of pre-set essential skills and professional values, which students much achieve to complete the course.

understanding the role of the clinical research nurse. Negative viewpoints included the lack of access to clinical skills and the lack of patient contact. There appeared to be a perception that a “patient” needs to be someone in a hospital bed and that clients recruited to clinical research studies did not fit those criteria. A “patient” was seen as someone you “did” something to. The study participants suggested throughout that clinical skills involved the administration of something practical and did not articulate any skills in relation to assessment, observation, behaviours or any of the softer, psychological skills which are critical to good nursing care. This study identified that students are very focused on the completion of their own assessment documentation as they progress through a placement. Currently, students have two documents to complete: a Practice Assessment Document (PAD) and an Ongoing Achievement Record (OAR). The PAD requires their mentor/practice assessor to review a range of Professional Values during every placement which students much achieve and is made up of 14 elements, clustered around two headings: “Professional attitude, behaviour and responsibility” and “Safe and compassionate care”. The findings of this study did not suggest there was any difficulty achieving these, however the achievement of competence around essential skills is more problematic. Borsting et al.’s study (2020) also reported limited evidence regarding achievement of learning outcomes in research settings, they stated they had been unable to find studies which focus specifically on achievement of learning outcomes through research where the students are in direct contact with research participants.

Whilst the words “evidence-based” and “evidence” do appear in the 91 elements of assessment in the practice assessment document, there is no obvious link to the students’ ability to assess research. Presently, this is assessed through the theoretical component of the curriculum, however the opportunity to show it being assessed in an

environment where evidence is being generated and created is being missed. This creates an unequal presentation of the application of research, suggesting that its primary goal is to support written work with research rather than showing how research is assessed and applied in practice. This is compounded by the student view that placement experiences exist primarily to provide them with opportunity for signing of their essential skills and a placement in a research unit did not enable this to happen. The PAD and OAR used by student participants in this study are assessment tools generated by a PAN London group of universities and have been designed to show competence against the NMC (2018) Standards of proficiency for registered nurses in practice. The standards have a focus on “Improving safety and quality of care” (Platform 6) and indicate that all undergraduate programmes should include “training in research methods and use of research evidence”. In their UK based study, Moore and Tierney (2018) conducted semi-structured interviews with 11 general nurses exploring their understanding and involvement with evidence-based practice. The participants, recently qualified nurses reported engagement with evidence-based practice during their training but once they had qualified, they appeared to move into a culture where research was not seen as a priority and were unaware of research taking place locally. They had limited awareness of or contact with research staff. Moore and Tierney (2019) recognise this as a disconnection between research evidence and practice, identifying it as a missed opportunity to bridge the research practice gap and they recommend promoting revalidation as a method for highlighting the importance of research and evidence to nurses. This is further echoed as the central focus in the “Becoming Research Confident” report (Council of Deans, 2019) following their survey of members of the Council of Deans of Health to scope the landscape of research in nursing, midwifery and allied health profession programmes.

The survey also included the student viewpoints, and the report includes 13 case studies from Council members which showcase the diverse and innovative approaches being taken in higher education, showing how research knowledge, skills and expertise is being delivered throughout the UK. In their findings, they describe research confidence as being at the centre of safe, efficient and innovative practice but report wide variations in university approaches to pre-registration research exposure for student nurses (Council of Deans, (2019). This may be because the professional identity of this group is still emerging (Kunhunny and Salmon, 2017). However, given the positive feedback in the findings of this study – the excellence of observed communication skills, the opportunity to see "research in action" and to understand the research process as it happens, again, may be a missed opportunity if exposure to the research process in action is not captured. Information literacy is crucial to the development of knowledge and understanding in a workplace context (Forster, 2017). This is set against a landscape of unprecedented acceleration in the use of social media (Loveday, 2020) as the world adapts to Covid 19.

7.3 Interface – Accessing the placement

This domain addressed the degree to which participants were able to access the instruction. Roland used this domain to assess his participants' access to the different modes of delivery of the e-learning package. In this study, that domain was interpreted as access to the placement, and in principle, the student participants in the study were able to access the "intervention" (the placement) physically. There were two modes of delivery: a spoke placement of two weeks initially and a hub placement of four weeks.

7.4 Instruction – Attending placement

Roland used this domain to evaluate the details of the intervention itself, interpreted for this study as the placement pathway undertaken by both groups of student nurses. In this case, the intervention was the experience of undertaking a placement in a clinical research unit. The aim of the placement was to create an opportunity for student nurses to assess and engage with research and to improve their confidence to apply evidence to practice, which were reframed as the objectives for this study, *assessment of clinical research*, *engagement with clinical research* and *application of evidence to practice.*

7.5 Ideation and Integration.

These two domains were addressed together; in the Ideation domain, what students "thought" they have learned and what they "demonstrated" they have learned is explored and in the Integration domain, assessing what change has come about in both knowledge and behaviours as a result of the intervention. Roland measured this domain using metrics to produce a statistical measure of the effect of the intervention (implementation of guidance and effect on admission rates). It is difficult to discern in this study between what the students thought they had learned and what they were able to demonstrate they had learned, mostly they perceived that connection was implicit in the examples they cited during a placement which happened after they had experienced the clinical research unit placement. This study focused on capturing the student experience through qualitative enquiry and three main streams of learning expressed by the student participants were identified.

7.5.1 Challenging practice

There was uncertainty in the findings as to whether the experience of research in action created the assertiveness required to challenge practice. Some student participants perceived themselves as being more adept at challenging practice after a placement in the research unit, identifying this in two ways, general questioning about current practice and assertiveness in challenging poor practice. However, in phases two (student diaries and interviews) of the data there were examples where students had been involved in practices which they knew were not based on the best available evidence and there was no evidence that they challenged this.

Nursing curricula for many years have been encouraging and empowering students to challenge poor practice, however the literature (Ion et al., 2016; Flores and Brown, 2018) shows that “Whistleblowing”, and reporting concerns remain a challenge for students and staff alike. A review of publications on “Whistleblowing” since 1975 (Mannion et al., 2018) shows that nurses and nursing students account for more than 80% of the healthcare professionals involved in reporting concerns, with over half of this group being student nurses. However, Brown et al. (2020) suggest there are still significant barriers to student nurses being able to report and raise concerns. In this study, there were conflicting views on the extent to which the research placement had empowered student nurses to challenge poor practice and to raise concerns. Fisher and Kiernan (2019) concluded in their study on student nurses’ experiences of patient safety and raising concerns that there were several reasons why student nurses find it difficult to challenge. Students strive for a sense of belonging in the placement area and often fear reprisal from mentors and colleagues and notably, non-registrant colleagues. However, some participants reported an increase in confidence in questioning and challenging in practice. How this confidence is generated is unclear

but understanding the research process has given most of the study participants the necessary insight into the mechanisms for generating evidence.

7.5.2 Doctor Google for critical appraisal

The data shows that student nurses appear to have a significant reliance on electronic media for sourcing evidence and a dependence on secondary sources of evidence. Three of the interviewed participants regularly reverted to Google for information and evidence. All the participants were emphatic about their newly acquired knowledge of the research process in action directing them towards locating primary sources of evidence, but the data did not show actual examples of that. The findings showed an over reliance on sources of information and evidence which may not have had the required exposure to the critical appraisal process.

Over the past 15 years, the study of literacy has extended to digital literacies using the internet (Barton and Lee, 2013; Gillen, 2014; Bhatt, 2017) and more recently has explored how digital literacy is used in higher education (Gourlay and Oliver, 2018). Bhatt and Mackenzie (2019) studied the digital habits of undergraduate students across a range of disciplines in two universities in Northern Ireland. They found that students increasing rely on the internet as a source of information, using web-based tools such as Google, Wikipedia, Facebook and Twitter, believing them to be free from bias. This is echoed in Lam and Schubert's (2019) study when they analysed the findings of their study against Melnyk et al.'s (2014) sixth competency; "Critically assess published research" and found the most common form of searching used by their participants (nursing students in Virginia, USA) for evidence was Google. Bhatt and Mackenzie (2019) pointed out that Google is an advertising company and as such reflects the values of their commercial partners. Whilst students are alerted to the risks

of depending on such search engines for sourcing valid information, it appeared in this study that students continued to trust and use information located through web searches, scanning search engine results and selecting what they believe appears most appropriate for the academic task, but without subjecting the findings to any critical appraisal. Bhatt and Mackenzie (2019) concluded that the challenge for universities was to develop approaches to counter what they refer to as epistemologies of ignorance which digital literacy has created and to educate students to be critically aware of how power operates in online spaces.

There was little evidence to show that students are engaging with processes or tools to assess the quality of evidence that such searches produce, with no reference to critical appraisal tools or methodologies. Participants cited online tools as sources to confirm drug administration and viewed these as “research”. When asked about the validity of these resources, the participants were unable to articulate any evidence to support their credibility and then doubted whether they should have trusted these sources.

This study has also found that to determine a student’s ability to assess research, there needs to be mechanism for measuring that ability during the student assessment process within the placement. Finally, for students to engage with research activity in the wider sense in practice, they need to understand where and how it is generated. Students reported an improvement in confidence and the development of assertiveness skills to challenge in a professional context, however, there was limited use of critical appraisal tools in the practice setting. Th experience of research in action has facilitated an engagement with research – students “thinking” they have become more research aware, and students stated they had a much better understanding (*knowledge*) of the process used to generate research evidence after the placement.

What was less clear was the extent to which they could use that evidence *(behaviours*) in their practice.

7.5.3 Becoming "research aware"

There were several instances across the findings that showed that participants who had a placement in the research unit believed they were more research aware as a result of the experience and responding to whether it had created a greater research awareness, confirmed that seeing research in practice helped them understand how evidence is applied to practice. Participants were able to recognise patients on clinical trials and research studies more readily and were more aware of the recruitment drives and studies on-going in the Trust.

As graduates, all newly qualified nurses should have a baseline level of research training. This study findings showed however that student nurses believed they can "compare" research, but they are not exposed to the practicalities of designing or participating in a research study in practice.

By comparison, medical students studying for a similar award of Batchelor of Science Degree, were encouraged to participate in research, to join medical student research clubs and to contact research teams to help with projects (Stehilk et al., 2020). They were activity supported to present at national and international scientific conferences (Kasivisvanathan et al., 2015) and post qualifying, they have a professional requirement to continue to contribute to research and to engage with research activity through the revalidation process (GMC, 2020). These two approaches towards facilitation of research competence most likely contribute to the different responses of nurses and doctors when presented with research opportunities or challenges. With the great strides made in interprofessional learning over the last decade, (Burford et

al., 2020; Morison et al., 2003) there are opportunities for sharing of learning approaches in research to make it more appealing and engaging for student nurses. Moore and Tierney's (2018) earlier mentioned study also support the findings of this study, citing health professional roles other than nursing as being more comfortable with research, with the perception that research was the preserve of doctors, anaesthetists and pharmacists. This is echoed in Anderson's study (2018) where doctors are perceived as the "leaders" with nurses (advanced practitioners) reluctant to challenge the traditional hierarchical status quo.

7.5.4 Generating research

During phase two (student diaries and interviews) of the study, the student participants presented a variety of interpretations of the origins of evidence, citing clinical guidelines, NICE guidance, policies and procedures and electronic media sources as the main sources of evidence underpinning clinical practice. No participant referred to any primary or secondary research and there was a suggestion that locating primary research was the preserve of the medical rather than the nursing community.

Participants used phrases such as "evidence based" and "based on research" but did not cite any actual studies. The students believed that the research is "out there", but people do not have time to look at it. Some students believed research was predominantly about drugs but could not cite any examples of any specific research studies or how accessing these might impact on their engagement with research in practice.

7.5.5 Application of evidence to practice

This section explores the student participants' application of evidence to practice. The study identified a lack of confidence in student nurses to apply research in practice

and identified the complexities educators and practice partners faced in facilitating these opportunities for research in action. Several participants citied examples of questioning treatment options and interventions and gave examples of information from medical colleagues which they believed were based on research evidence. The participants accepted “perceived” evidence from colleagues without the need to question where the evidence had come from or how valid or reliable it may have been. Perhaps disappointingly, none of the participants were able to cite any research studies for the treatment options or inventions which they cited.

When exploring reasons why participants did not cite any primary sources of research, several factors were identified. The research process was perceived as cumbersome and protracted, and the process of change was perceived as a process which needed to go through several levels of seniority in the service. Participants suggested that there needed to be an easier way to translate evidence into practice. There was also a perception that engagement with research was time consuming. Recruitment to clinical trials was seen purely as the responsibility of the clinical research team rather than ward staff. One participant raised an important concept which may help explain some of these perceptions; pointing out that doctors are more open to talk about research and speak confidently about it, whereas nurses tended to send students to search for research on their own. Doctors were more readily able to articulate an (evidence based) rationale for a choice of intervention. This suggested a dichotomy between the way doctors and nurses are taught research as a subject, a possible contributory factor to the level of student nurses’ ability to assess and engage with research.

There was a lack of awareness of the research activity taking place across the healthcare sector, nationally and globally. A study carried in the UK explored the

disconnection between practice and research evidence nurses (Moore and Tierney, 2018). They concluded that nurses on wards were unaware of research locally and that contact with research staff was limited. Their recommendations included creating placements for student nurses with clinical research teams. An integrative literature review exploring student nurses' attitudes and use of research highlighted a lack of support but moreover, opportunity, for students to use research in practice (Ryan, 2016). The study concluded that confidence in the use and application of research is lacking which resonated with the findings of this study. It appeared that student nurses generally engaged with using research positively but there was a lack of both support and opportunity to do this in a meaningful way in the practice setting with students feeling more supported in the university setting with regard to the utilisation of research, further perpetuating the research practice gap. Ryan (2016) concluded that further collaboration is needed between educational facilities and clinical settings. This was set against a backdrop in the literature of the continuing prevalence of the research practice gap (Brooke et al., 2015; Malik et al., 2017; Lam and Schubert, 2019) in general clinical practice and the situation of research as a subject in academic rather than clinical practice.

Conducted in Australia, a study interviewed and observed academics delivering evidence-based practice classes to explore how evidence- based practice is used in an undergraduate student nursing programme (Malik et al., 2017). The study explored how this learning subsequently facilitated student nurses to use evidence in theory and in practice. Their findings revealed that not all academics expected students to apply evidence-based practice in clinical experiences and this subsequently affected student nurse's appreciation of evidence-based practice during practice placements. Their findings endorsed the need for student nurses to have access to evidence based

practice champions and mentors. They also identified a further constraint to students' confidence to apply evidence to practice as mentors outside the research environment not having enough time or knowledge to help students bridge the gap. They concluded that the clinical application of evidence-based practice is essential at school and practice level.

However, some behaviours appeared to have altered because of the placement, participants reported an increase in how they question in practice and reporting more confidence in questioning practice-based decisions. Participants were also able to use the experience in their academic work, stating that understanding the research process helped prepare for the writing of the dissertation and understanding of the key principles of consent.

7.6 Implementation

Roland considered the sixth and seventh domains, *Implementation* and *Improvement* together, however for this study, there was value in examining each of these separately as they presented different interpretations of the findings. The sixth domain explored whether change across individuals, for example, departments or organisations, following the instruction has been demonstrated. The findings in the data suggested a significant improvement in the prominence of research following an organisational wide response to the lack of visibility of the work of the clinical research team. An increased understanding and awareness of the clinical research nurse role and the value the clinical research nurse can add to student mentorship was also evident.

7.6.1 The role of the research nurse uncovered

Throughout phases one and two (preparation of placement, and the student diaries and interviews) of the study, it was clear that student nurses had a very limited understanding of the role of the clinical research nurse, however the time spent in the clinical research unit cemented their understanding of the value clinical research nurses added to both the organisation and to the body of evidence they generate through their research activity. Mentor participants highlighted the desk-based nature of their role which was also observed in the data from the student participants and suggested that the culture in the NHS supports the perception that a job which is done sitting down, for example a desk based job, did not hold the same value as a job which was done standing up. The experience of the placement in the research unit enabled student participants to respond to this positively, recognising the value that research adds to healthcare and the patient experience. Several students cited examples of "recommending" the clinical research unit to fellow students and showed pride in being able to share their experience of research in practice with their class group.

A study which explored the evolving professional identify of the clinical research nurse was carried out in the UK, examining the professional role identity of the clinical research nurse, in order to inform the professional practice of clinical research nursing (Kunhunny and Salmon, 2017). They conducted interviews which focused on key areas including professional responsibilities, accountability, training and mentoring and communication. They also concluded that clinical research as a nursing practice domain is not clearly visible and whilst the clinical research nurse continued to use a range of clinical skills and experience, their role remained a source of ambiguity across the board from trust management to service level staff. Additionally, they noted that clinical research is often not recognised by many professionals in both health and

education sectors. Given that the history of clinical trials can be traced back to the book of David in the Bible[7] and the trial of legumes, all the way through to the Nuremberg Code (1947, cited in Shuster 1997), the Declaration of Helsinki (1964), the Belmont Report (HSS, 1976), and the International Conference on Harmonization (1996) which resulted in the international publication of the Good Clinical Practice guidance (EU, 2001; Bhatt, 2012), these findings are concerning.

As this study ended, it was clear that work was in progress to address the visibility of the profile of research in the Trust and at a wider level, through the work of the NIHR with the creation of Local Clinical Research Networks. The NIHR established the Clinical Research Network which now co-ordinates the work of 15 Local Clinical Research Networks through its' coordination centre. As part of supporting the Life Sciences; Industrial Strategy (Bell, 2017) local research networks will have increased visibility across public and private sectors including academia. More specifically, as part of the Skills Action Plan detailed in the strategy, they will be required to engage with training an entirely new cadre of technologists, healthcare workers and scientists at the cutting-edge of digital health creating new opportunities for collaborative working across the sectors. At Trust level, the mentor forum confirmed the improved visibility of the clinical research nurse with better signage, badging and uniforms. The activity of the research teams is now more widely visible across the Trust with posters, social media and marketing events

[7] An experiment conducted by King Nebuchadnezzar who ordered his people to eat only meat and drink only wine. But several young men objected and were allowed to follow a diet of legumes and water for 10 days. When Nebuchadnezzar's experiment ended, the vegetarians appeared better nourished than the meat-eaters, so the King permitted the legume lovers to continue their diet.

7.6.2 The value of the clinical research nurse as mentor

Throughout the data from phases two and three there was a clear acknowledgement of the excellence in communication skills which the clinical research nurses use in their practice. Participants identified a significant benefit of the placement as observation of excellent communication skills and the opportunity to practice these, skills which are fine-tuned by research nurses through a combination of time, experience and formal training.

As a role model, the clinical research nurse is ideally situated to showcase a range of skills to students with their exclusive focus on the care of research participants, assuring safety, obtaining informed consent, ensuring the integrity of the implementation of the protocol and the accuracy of the data collection and recording (Kunhunny and Salmon, 2017). The findings in this study highlighted the many excellent learning opportunities student nurses were able to capture through the excellent mentorship they received on the research placement. Several participants commented particularly on the communications they observed between clinical research nurses and their clients. A qualitative study, undertaken in Norway, gave 100 student nurses the opportunity to become acquainted with hands on research during a clinical placement, giving students a participatory role in active, clinical research (Borsting et al., 2020). The study aligned learning outcomes with participation in a research project. Their pre project expectation was that student learning would centre around hands-on research and the research process. The results of their study however found students had greater focus and value on the development of their communication and interpersonal skills, a conclusion that resonated with the findings of this study. They found the most significant learning which took place was in developing one's communication skills followed by developing observation and

assessment skills. Their participants reported being able to hone their communication skills, become more confident and being able to utilise the theoretical knowledge they had gained in a research environment, all of which resonated with the findings in this study. Participation in research creates a bridge of understanding between theory and practice (Laursen, 2015) and as such, pointed to the value of student nurses engaging with clinical research in practice.

This theme continues in a study carried out in the USA exploring the implications for educators involved in the delivery of evidence-based practice education in student nurse curricula (Lam and Schubert, 2019). Their study found that students had limited role modelling opportunities to capture the integration of evidence into practice. This echoes Ryan's (2016) earlier study which found that undergraduate student nurses experience a lack of support and opportunity towards using research for evidence-based practice. These studies clearly point towards the need to capture the learning opportunities which clinical research, in whatever format it is engaged with, can offer to student nurses.

The earlier mentioned study into the evolving professional identity of the clinical research nurse (Kunhunny and Salmon, 2017) identified four main themes which contribute to the identity of the clinical research nurse, reflecting the values, beliefs, communication and autonomy which the participants in this study identified as key learning opportunities. Clinical research nurses were in a prime position to demonstrate and share their communication skills. They had expertise in providing client focused information in a way that student nurses wanted to emulate and replicate. They demonstrated good levels of emotional intelligence as they empathised with clients and family and showed how using social skills can help clients make informed decisions (Kunhunny and Salmon, 2017). Their roles as advocates for clients

and applying the ethical principles of informed consent provided highly relevant learning opportunities for student nurses (NIHR, 2019).

7.7 Improvement

The final domain in the 7I's framework presented a challenge; Roland used it to understand whether the instruction has resulted in improvements in patient care and experience whereas this study sought to evaluate an educational initiative, specifically asking *"How does the experience of 'research in action' impact on student nurses' engagement with research and enable their use of evidence to underpin clinical practice?".*

This study did not have the capacity to capture patient experience or improvements in the care they received, so the framework has been adapted to consider whether the experience has resulted in creating possible improvements to the intervention. This domain explored possible placement length and the structure of future placements.

7.7.1 Placement considerations

The first phase of this study provided the foundation for the creation of the placement pathway. Whilst this was revisited and revised during this study as part of the action research process, the data suggested that more focused planning and linkage to clearer learning outcomes may have produced more positive evaluation data. Across the findings, there were a variety of views presented on the optimum length of the placement and the limitations on achieving essential skills. Student participants expressed a range of placement length options, from creating a one- week placement for first year students, to a placement for third-year students of between four and six weeks. Many participants supported the view that every student may not appreciate or see value in a placement and there was a suggestion that this should be a

placement of choice. Most participants suggested a shorter placement than the length they were allocated.

In the pre-registration nursing programme, practice placements are allocated to students through their university/school placements office, aiming to give student nurses the widest range of clinical practice experiences. There are currently over 10,000 clinical research nurses currently working in the UK, delivering thousands of research studies in a variety of NHS settings, (RCN, 2019) with the potential to provide placement opportunity for student nurses to see how these nurses manage the research studies which can lead to the transformation of treatments and services for patients. However, the findings from this study suggested that several factors need consideration prior to replicating the placement pathway.

Not every student nurse saw the value in a placement in a research unit. The placement was described by some participants as “of no benefit”, “not suitable for every student”, with “not much practical skills to be gained” and with a “lot of sitting around”. Additionally, on return to the classroom setting, the student participants reported being questioned by fellow students, who asked “wasn’t it boring…wasn’t it just all form filling…?”. These findings are echoed in a study in the USA where mentor/student pairings were created between hospital nurses involved in clinical research projects and student nurses (Kennel et al., 2009). Students were asked to perform literature reviews, collect and analyse data and help with poster presentations. The rationale for the study was based on the researcher’s observations that research was viewed as a dry and irrelevant subject by student nurses. Student evaluations at the end of the programme were positive, with analysis of pre and post testing scores indicating a significant increase in student interest in nursing research.

This was echoed with testimonials from registrants who are currently working in the clinical research nurse role. Clinical research nurses across England were invited to share their views on their role and the challenges and opportunities it presented (NIHR, 2019). Many used the forum to share their views of research prior to starting the role and there was an overwhelming view that they had previously viewed research as “dull”, and “boring”, explaining how they had fallen into the role, and likened research to being “like a swear word” and recalling it as something they hated having anything to do with it in their training. One contributor stated that they thought research was “still a dirty word amongst nurses”, and they said the most common reaction to being a clinical research nurse was “why would you want to do that”? (NIHR, 2019). It is not therefore surprising that this perception has filtered through to the student nurse population. This must be considered however against the backdrop of evaluations and testimonies from the participants in this study, who all endorsed the value of a clinical research unit placement. The challenge is to change the perceptions and ingrained misconceptions about research and to reframe the opportunity to experience research in action to appeal to a much wider audience.

In their report on “Becoming Research Confident”, The Council of Deans for Health (2019) clearly articulated the need for student nurses engagement with research, to advance the knowledge base of the professional, and as essential to the professional standing of the discipline and pointed out that engagement with research is not only appropriate for student nurses who may be considering a career in research but for every single healthcare professional who will have to question their practice in the future. A study conducted in the USA found that not all nurses are prepared to participate in research, as clinical research nursing and the Good Clinical Practice (GCP) programme (NIHR, 2020) do not consistently feature in pre-registration nursing

curricula (Eckardt et al., 2017). In their study, they created a 45-minute module designed to introduce nursing students to the principles and practices of clinical research. In their findings, they identified the specialist skills clinical research nurses shared with students including advanced technical proficiency and fastidious record keeping. They advocated the need for all nurses to be research nurses, pointing to the broader nursing community having the skills and expertise to serve as clinical research nurses with the dramatic increase on the number of research participants and the movement of clinical trials out of specialist units into general hospital care areas. Whilst conducted in the USA, it could be argued that their findings supported the findings of this study, where a broader approach to ensure student nurses are equipped with the skills to engage with research needs to be embedded in the curriculum. Whilst students may traditionally have engaged with research purely from a theoretical perspective, the current evolution of the “golden age of clinical research” (Faulkner-Gurstein et al., 2019, page 59) has created practice opportunities for engagement with research, which this study suggested are currently underutilised.

This study findings also pointed to a split between student nurses who saw value in engagement with the research placement and those who were unable to overcome its’ perceived limitations. The student experience is central to any placement and the placement must be fit for the student needs. Exploring the barriers of resistance and building on the positive evaluation and experience may help to create a revised model of placement for future students.

Conversely, the mentor participants advocated a longer placement, suggesting that anything less than four weeks would not give the student the opportunity to see the full range of research activities. However, there is a strong endorsement that research

in practice needs to be embedded in the student curriculum from the outset and that active research needs to be more visible and tangible.

A range of views from students and mentors about placements within the clinical research unit showed that careful consideration of length of placement, structure and learning opportunities was needed if levels of student satisfaction were to be improved. Essential skills and professional values needed to be achievable to improve the numbers of students who actively choose to engage with the clinical research team. The mentor focus group endorsed a collaborative approach to research in practice and joint facilitation of this with the university.

Clinical research units do not have capacity to facilitate every student nurse for a placement of a similar length of the placement used in this study. This is echoed in the literature where the complexity of the clinical research nurse role is explored and defined (Hunhunny and Salmon, 2017; Moore and Tierney, 2018), and concluded that the current pre-registration nursing programme is inadequate to prepare registrants to take on the clinical research nurse role or to practice in that role autonomously, and suggested that the supervision of student nurses needs to adopt, at least in the early stages of the placement, a very hands on model of supervision. However, a longer placement in a clinical research unit may enable students to undertake more independent practice under supervision as they became more familiar with the role of the clinical research nurse and the processes of research in practice. A radical rethink of how exposure to the process of research in action is therefore required if the net is to be cast more widely to allow all student nurses access to this valuable learning experience. One mentor shared her aspirations for the future, where *"the research team is not seen as a separate part of the hospital …but on every ward".* As is evident from the dearth of literature reporting on actual placements in clinical research units

in chapter two and echoed most recently by Borsting et al. (2020) who confirmed that nursing students' involvement with clinical research projects has been scarce, different approaches to enable students to engage with research in practice are now required. Additionally, mechanisms to support the assessment of, and engagement with, research should not be confined purely to placements in research units other approaches should be explored.

The rationale for the need for this change can be viewed from a more strategic lens, with the focus in the UK Forward Working Industrial Strategy (Department of Business, Energy and Industrial strategy, 2017) on life sciences research's commitment to raise research and development to 2.4% of Gross Domestic Product (GDP) by 2027, with the commitment from the Council of Deans of Health (2019) to give pre-registration nursing students an understanding of the role of research in assessing, evaluating and improving practice and with the NIHR (2019) Clinical Research Nurse strategy focus on building strategic relationships with Higher Education Institutions. This is further supported by the Nursing and Midwifery Council (2019) who stated that nursing education should support opportunities for research collaboration in education.

7.8 Conclusion

Synthesising data from multiple datasets is a complex task, in this instance stratified using a linear model of evaluation to assess the impact and effect of an educational intervention, using a clinical research unit as a placement pathway for student nurses. The model used the concepts of interaction, interface and instruction to explore student's engagement and satisfaction with the intervention and described how it matched with this study's objectives. It concluded that whilst the research unit is a hidden gem, giving students a clear insight into the world of clinical research, it is not

viewed as a suitable placement by all students. This gave an insight into students' *engagement with research* after a placement in the clinical research unit. The concepts of ideation and integration were used to explore what students thought they had learned and what they could demonstrate they had learned, concluding that whilst levels of awareness of the research process had improved, tangible examples of its' application in practice were not evident. Student nurses' *ability to assess clinical research* was questionable. There was a suggestion that *confidence to apply evidence to practice* may be coming from unreliable sources and further work to strengthen the collaboration between research in practice and research as a taught subject in the university needs to be prioritised. Finally, the domains of implementation and improvement were considered, and concluded that the role of the clinical research nurse is under used in education and the learning from this study needs to be taken into consideration for future placement development. The next chapter will discuss how these findings can inform changed in practice and the need for further investigation.

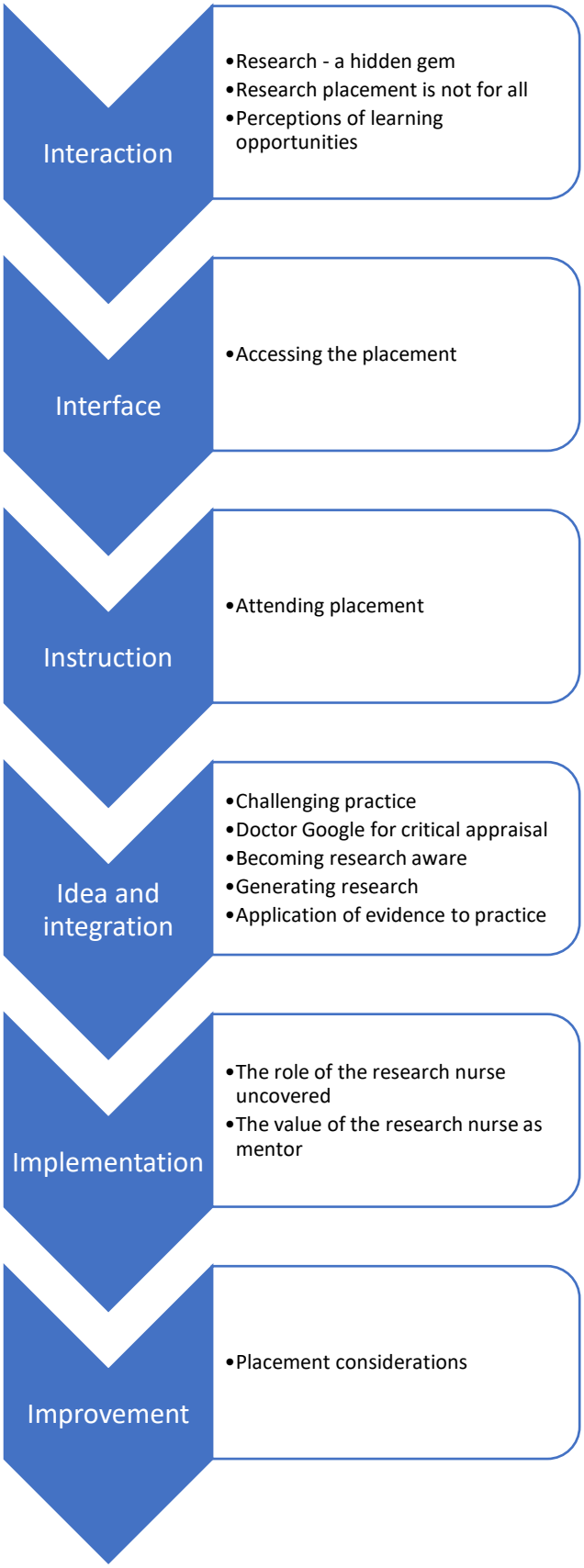


Figure 28: Application of a conceptual framework.

Chapter eight – Recommendations and conclusions

8.0 Introduction

This chapter concludes this action research study which set out to ask "*"How does the experience of "research in action" impact on student nurses' engagement with research and enable their use of evidence to underpin clinical practice?".* Following an informal conversation with a staff nurse attending a university/Trust jointly facilitated training session on mentoring student nurses, a placement pathway for second and third-year student nurses to experience research in action was created in a clinical research unit, supported by clinical research nurses. Following three phases of data collection, this study has now reached its' conclusion and this chapter will propose the recommendations which the study finding suggest will help future generations of health providers and educators integrate the craft of research into curricula for student nurses. These recommendations are grouped under six headings. This chapter will also consider the limitations of the study and the implications for future research studies.

8.1 Showcasing the hidden gem

The first recommendation from the study is the need to create a much wider sphere of visibility around the work of clinical research nurses and clinical research teams within Trusts. Research units should be empowered to share and advertise the work they are currently undertaking, and they should be supported in doing this through Trust initiatives, collaboration with HEI's and social media networks. Clinical research nurses should be invited to speak with students from all healthcare disciplines and should be included on the agenda for Trust induction for new staff and students.

8.2 Capture the strategic lens

Whilst the work of the Council of Deans for Health is very encouraging, a wider approach towards embedding research activity and competence needs to be managed from a more strategic perspective. Lobbying of professional bodies (the NMC, the RCN, the CNO office, for example) needs to be driven by professionals and students active in healthcare to ensure the *explicit* inclusion of research in healthcare curricula for all students, with a particular focus on *research in action* and engagement with clinical research teams, clinical research nurses and research networks.

8.3 Implications for curriculum design and Knowledge Translation

The findings of this study confirm the on-going existence of the research-practice gap, with research still being perceived as “boring”, “dull” and a “dry subject”. Healthcare educators must address this dilemma. At present, the student nurse curriculum does not require students to acquire research skills and there are barriers to this should it be added to the curriculum, most notably, the research ethics process. However, research is explicit in curricular; it is taught in the classroom setting but it is not explicit in the student experience in clinical practice. Novel ways of presenting research as an academic subject need to be developed to engage students across disciplines with research as an exciting and interesting opportunity. Educators need to move away from traditional talk and chalk approaches to delivery and engage with new modes of learning, for example the flipped classroom, simulation, and using web-based applications to design engaging materials

Described by Esmail et al. (2020), models of knowledge translation have emerged as approaches to fill the gaps between evidence and practice and have been defined as an iterative process that includes the synthesis, dissemination, and exchange of

knowledge to improve health services (Canadian Institute for Health Research, (CIHR, 2017). Cochrane (2017) produced and launched the Knowledge Transfer Framework and cited their vision as a world of improved healthcare where decisions about health are informed by research evidence.

Wensing (2019) suggested that few insights into the accumulation of scientific knowledge to transfer knowledge into practice have emerged in the previous decade but suggested that implementation science methodologies (closely aligned with action research) may help develop the application of knowledge translation. Straus et al. (2013) differentiate between knowledge transfer – a passive process and knowledge translation – an active process. They suggest that knowledge transfer has been bolstered by the evidence-based practice movement, most notably the underuse of user involvement and as such has limitations, most notably the underuse of user involvement from the early stage design of the research. On the other hand, knowledge translation is rooted in the co-production of knowledge; collaboration between researchers and users from the inception of a study through to dissemination of its findings (Straus et al. 2013).

As it was not possible to run more action research cycles for this study, Knowledge Translation models offer the opportunity to test the approach used with student placements in clinical research units and to explore different ways of achieving "research in action" experience for all under-graduate student nurses, to bridge the evidence-practice gap. Essentially, Knowledge Translation, in the context of the student nurse curriculum, is a process of working with practitioners, our educational partners, and exploring what is in the curriculum already, how it is taught, and what the findings of this study can add to bring a different balance to what student nurses can learn and experience about research in action. Knowledge translation models fit

well with an extended action research cycle, starting with determining what is currently happening within the curriculum, what needs to change, how can it be tested and how can it be measured and evaluated (Bennett et al., 2016, Gerrish and Piercy, 2014).

There are considerations from this study for design of the next iteration of the pre-registration nursing curriculum. At the next re-validation point of the pre-registration nursing programme, planning teams designing student nurse assessment documentation must consider processes for students to match learning opportunities, which occur whilst engaging with research activity, to assessment criteria. This is crucial if students are to recognise the value in such placements and are to engage with research in every placement. Consideration must be given to how this can be reflected in the wording of essential skills and professional values in the student assessment documentation. Additionally, the language used in the teaching of research in the classroom setting needs to be reviewed. Gudi et al. (2020) reinforced the value of Knowledge Translation tools as central to the use of evidence-based research in practice, policy, and further research, however they advocated the use of "plain language summaries" of research findings as a mechanism to engage students with research. They suggested that the use of plain language summaries could act as a helpful knowledge translation tool by enabling researchers to widen their reach and make their findings more visible and accessible. As an approach, this could be a tangible way of helping student students overcome the dependence on "Dr Google" which this study found. The challenge of creating a "research ready" workforce is compounded by the reality that many nurse educators have no research experience so when tasked with teaching the research process, they are unable to recount their own experiences or insights into critical appraisal and knowledge translation. However, the development of the NHSEI 90 day collaboratives, along with the Chief

Nursing Officers Research Strategy (NHS, 2021) provide a useful framework and opportunity where the use of evidence can be rapidly translated into practice and consideration needs to be given to the use of this initiative with newly qualified staff, perhaps as part of a preceptorship programme, as there does not appear to room in the student nurse curriculum.

Opportunities for interprofessional learning need to be explored and approaches used for medical students need to be considered for inclusion in the student nurse curriculum to integrate understanding of research in their programme. This could include setting up research clubs and creating opportunities for student nurses to be involved with Nursing Doctoral/PhD students during all stages of a research project.

8.4 Opportunities for practice delivery

There is an untapped opportunity for student nurses to engage with research activity throughout their practice placements, which needs to be developed in partnership with HEI's and key personnel in clinical research units. The model used in this study is not sustainable, nor does it have capacity to be extended to all students. A recommendation, initially muted by a mentor participant in the study, is to explore creating a model of "Research is everywhere", integrating the work of research teams and nurses into every student placement. This collaborative approach would need to be supported with preparation for practice (in the university) and setting of specific learning opportunities and timetabled experiences in the practice area.

8.5 Opportunities for classroom delivery

Acknowledgement of the role of the clinical research nurses needs to be embedded in the curriculum both as a future possible professional role and for the value they add as mentors and role models. Clinical research nurses should be invited to speak with

student nurses early in their programme to raise awareness of their role, raise the profile of research in their organisations and highlight career pathway opportunities.

HEI's need clear and transparent links with Local Clinical Research Networks and networking opportunities which can include student nurses, and course teams need to be created to raise the profile of research activity in the locality.

Digital literacy needs to be embedded in the curriculum from the start of the programme. Student nurses need to have the skills to differentiate between valid evidence and evidence that has not been critically appraised and whose quality is not assured.

The facilitation of critical appraisal skills needs to be reviewed, especially considering the prevalence of social media. Innovative approaches to critical appraisal need to be created, which provide practical application of appraisal tools and skills to web based sources of information.

The Good Clinical Practice course, which prepares healthcare professionals to be involved in clinical research, should be offered to all students to complete on campus/on-line prior to starting practice placements.

Novel ways in which research can be taught in the classroom need to be explored and designed. Educators need to embrace the challenge to make research, as an academic subject, engaging and attractive to the student audience and explore ways in which "research in practice" can be replicated in the university setting.

8.6 Further research

The findings of this study suggest that further research into the link between research, evidence-based practice and students' confidence to challenge practice would be of

value. Repeating elements of this study, with amendments to the placement pathway model and the preparation of students for this prior to placement, will be further discussed in the next section.

8.7 Limitations

One limitation of this study was the study sample size, and this study would have benefited from a larger number of participants to gain a wider perspective on the impact a placement in a clinical research unit could have. However, even with limited numbers, this study has shown that the current model of a four to six-week placement within a clinical research unit is not sustainable or practical if every student nurse is to get an opportunity to see clinical research in action. A further limitation which emerged early in the study was the dearth of literature to support a student placement in a research unit, with many of the papers extracted containing anecdotal accounts of research placements rather than robust evidence, which changed the nature of the literature chapter from a literature review to a scoping review, drawing on work undertaken in parallel professional groups and across a wider geographical area, limiting opportunity for generalisability, meaning that the design of the research was exploratory, rather than focused on the effectiveness of the placement in subsequent clinical settings more than six months to a year after the student had left the research unit. This study depended on the individual, subjective experience of each of the participants, in the context of one hospital, which can be acknowledged as a further limitation. Finally, as this study concludes, the Covid 19 pandemic has generated a radical restructure of the work of clinical research teams across NHS Trusts and created an element of uncertainty as to how future placements can be accommodated with the movement of clinical research staff to front line posts and the suspension of

new clinical trials (NIHR, 2020). A personal reflection, further exploring limitations, the study methods and the doctorate journey is offered in Chapter nine.

8.8 Conclusion

The aim of this action research project was to examine the impact a placement in a clinical research unit had on student nurses' engagement with research and enable that engagement to underpin their ability to apply research to practice. The findings suggested that students who have had a placement in a clinical research unit were more aware of the research process and the existence of research activity in practice, but it was uncertain if this had an impact on how the have used evidence in practice. The connection between "engagement" with research and its subsequent impact on students' use of evidence in clinical practice was tenuous and requires further exploration.

At the outset, there were pockets of good practice in the UK where HEI's and hospital Trusts were working together to facilitate placement experiences but little evidence to validate the experience as a method of bridging the research practice gap. Action research as a method of enquiry was chosen as the study design, as it provided a method of systematic enquiry where change and improvement (Kemmis, 2009; Craig, 2009) were the central components through each of the three phases of the study. The data generated a series of themes which were organised across the study domains of *assessing clinical research*, *engagement with research* and *confidence to apply evidence to practice* and following the application of a conceptual framework, were further refined to create a framework for discussion of the findings. The key findings were that whilst student nurses appear to be more willing to engage with research as a result of the placements, their assessment of research is not always

based on validated critical appraisal tools, and they lack confidence to apply or challenge practice that is not based on best available evidence. The discussion raised addition issues related to the actual placement, the visibility of research generally, the role of the clinical research nurse and the classroom teaching of research in universities. A comprehensive set of recommendations were generated as a result of this review, contextualised however, against the uncertain backdrop of healthcare delivery during a crisis period of a global pandemic.

Chapter nine – A personal reflection

9.0 Introduction

During the viva, I had an opportunity to share my work over the past five years on a professional doctorate, which I count as one of my greatest achievements. As I come to the end of that journey, it's a timely opportunity for me to reflect on my research journey and the execution of this research study.

9.1 The original idea

Broadly, I was trying to find out if a placement in a clinical research unit had any effect on how student nurses assess, engage with and apply research in practice, leading me to the concept of "research in action"; the notion that if students can see research being created in the real world, from the setting up of a study, through to recruitment and consent of participants, on to collecting and registering data, and to creating recommendations for change in practice, they may be better placed to use actual evidence in practice. The idea for the study came about after a chance meeting with one of the clinical research nurses at a mentor update, which was something I used to facilitate for the Trust as part of my link role. She asked, "why don't we have your student nurses come on placement to the clinical research unit?". At that time, the clinical research unit was situated in the Corporate Network of Care, with funds for the unit being drawn down from Central Government, rather than directly through the Trust, and as such, was excluded from the placement pathway. However, I could see a potential opportunity here, I was aware from my work with pre and post registration students, and from my experience as a lecturer on an evidence based practice module, that nurses had difficulty making the connection between research as taught in the university and research in action, so when I was

invited to go and meet the team, and a very proactive team leader, we started to explore options for students have a placement opportunity to the clinical research unit and the idea for this study was born.

Whilst, over the course of this study, there has been a trend to develop greater clinical research academic careers, with the publication of “Best Research for Best Health, The Next Chapter”, (NIHR, 2021) my primarily focus was to try to get students engaged, from the beginning of their studies with research, in a way that made them think about how it is used in practice. My rationale was that if students were exposed to research taking place, in action, and the process that is followed to generate evidence, they would be better equipped to both use and question research in practice.

9.2 The literature

In my portfolio, I have explained that when I did my initial literature review for this research study, I could find very little literature that helped me understand my research question in the context I wanted to explore it in. In one way, this was quite helpful, as it gave me the signal that the subject merited a structured, primary research study. However, I had to cast my net wider, and find a way to include all the commentaries, reports, reviews, opinions, experience, and guidance which existed in the literature and not look only at student nurses’ experiences of research in action but also to look at the experience of other health care professionals, and their professional bodies and mechanisms for education, so a scoping review became a workable option. Whilst these types of reviews generally provide a framework for mapping concepts, I took this a stage further to use it as method for synthesis, this was useful for me to show what I had learned through the scoping process and how I

used it to design the research study and the way in which I would collect and analyse my data.

9.3 Designing the study

In chapter three, I have given an overview of my use of action research, however I had to adapt it to fit the context of the research. My three phases, in effect, describe a spiral. The first phase, the setting up of the placement, initially was quite straight forward, however part of that phase was also the testing of the placement and the subsequent revisions to the placement timetable, and that was a more elongated process because the research unit could only take one student at each time. Having single cycles was not possible; the clinical research unit could only accommodate one student at a time so if a single cycle had been used, it could have been between six and 12 months before it was possible to move to a second cycle, and so I adapted the action research model to fit that context. This allowed me to review data from groups of students (one group of students during phase one and a separate group during phase two), giving the study a greater degree of reliability due to the sample size. During phase one, there were several opportunities to engage with stakeholders as part of the action research process, to incorporate their feedback as each student transitioned through the placement. This gave me the opportunity to revisit the placement pathway, mostly to change the duration, so starting with a one-week placement, moving on to a two-week placement and finally to a four-week placement. The programme was adjusted with each change in placement length, so students had a schedule to follow whether they were on that placement for a single week or a period of four weeks.

In the second phase, I chose two approaches to data collection, with a diary and an interview. The diary was chosen because the literature (Jacelon and Imperio, 2005) suggested students would engage with a diary approach which allowed them to add reflections at the end of each shift. This is something already built into the student placement design, students have 30 mins of reflection time allocated to them at the end of their shift to reflect on achievements, concerns, opportunities for learning, either on their own or when time allows, with their mentor. By providing an electronic tool, the task would be less onerous for students and would be accessible for most students, most of whom use their smart phones during placements. A paper alternative was also available.

The interview approach was chosen to give me an opportunity to drill down into the themes which would emerge from the diaries, and to give the freedom to use a semi structured approach to questioning, providing a deeper insight into the factors that may be hindering students being able to apply evidence in practice. There were some limitations to using these approaches; not every student returned the diary, however all wanted to be part of the study and wanted to be interviewed. Going forward, had I been able to continue to a second cycle, I would have considered alternatives to the grid diary and one possibility would have been to use electronic recordings of voice notes, so students could just record voice memos at the end of each shift and send the digital voice recordings through as the record of their reflection.

In the third phase of the cycle, the mentor focus group feedback generated some valuable insights which, had I been able to continue with a second action research cycle, would have informed the design of the placement, and the need for greater

classroom preparation to extend understanding research in action, beyond just exposure to a specialist area like the clinical research unit.

As I completed the second, elongated, phase of the study, there had been eight eligible participants who had been through the placement in the research unit, six of whom took part in the first cycle. After they had all completed phase two, all at different times, there was scope to start another action research cycle using the early findings from the data. However, two things happened; firstly, there was a major restructure carried out in the clinical research unit after several of the key personnel left, including the lead nurse that I had worked with initially to design the placement. Whilst the new structure was being embedded, the decision was made to close the unit to student nurses in 2019. During that time, I did meet with the new team, and discussed my preliminary findings with them. We agreed to use these to plan for the reopening of the unit to students during 2020. We had discussions about aligning essential skills and professional values from the students practice assessment documentation with learning opportunities we could make more explicit within the placement. Secondly, the global pandemic happened, all the activity in the clinical research unit was put on hold, all the staff were redeployed to the front line and my energies were rediverted to just trying to keep students on programmes. Whilst I had originally intended to carry out further action research cycles, the reality was that it just was not possible.

9.4 The conceptual model

Damian Roland is a paediatrician who splits his time between a clinical role in the paediatric Accident and Emergency at Leicester NHS Trust and an academic role at the university of Leicester. He designed this conceptual model to evaluate an

eLearning programme and was supportive of its adaptation for this study. I had to make some adjustments to bridge the gap between the evaluation of a learning intervention and learning in a placement setting. The first three I's were grouped together (Interaction, interface, and instruction) and the commentary on these is brief. This is because with Roland's study, he was evaluating the extent to which his participants accessed and engaged with the intervention, which was an eLearning programme, whereas with my study, engagement did not present a challenge as it was not an option, students had to attend the placement. The focus on this study was on the last four I's of the model; Ideation and integration were combined, something which Roland supports in his original work and Implementation and Improvement were amalgamated to discuss the findings and recommendations for the future.

9.5 Findings

It was clear from my study that there are skills which clinical research nurses have which students saw real value in observing and emulating. Specifically, when the student participants talked about the skills that clinical research nurses used during this time of "research in action", they talked about the unique opportunities they had to observe excellence in communication, particularly around the recruitment and subsequent support of study participants. They highlighted their observations that participants were recruited without any pressure or coercion or persuasion to participate in a study. They also observed great attention to detail in completing the documentation for each stage of a study and this exposure showed them the importance of accurate documentation and completeness of data collection. From the GCP course, which was overseen by the clinical research nurses, the students

learned about the process of how research is generated and carried out and gained an insight into the ethical dimensions of research in action.

For students who attended a clinical research unit placement, there was an obvious improvement in visibility, in both the role of the clinical research nurse and the work of the clinical research unit. There are three main things to consider:

- There were varying views on the length of the placement from some student participants suggesting it could be a couple of days to a week, through to mentor participants believing a longer placement of six weeks could be more appropriate.
- The current model of one student on placement in a clinical research unit at any one time is not going to allow every student to get an opportunity to see research in action within this placement.
- One of the major disadvantages of the placement, from the students' perspective, was the lack of opportunity to achieve essential skills or professional values, elements that would be signed off in their practice documentation, which they saw as central to any placement. Students did not see the link between the skills and values in their practice assessment documentation, and the learning they undertook on this placement. This is something that could be highlighted in the theoretical teaching and learning of research in the university.

9.6 Recommendations

A radical rethink of how we deliver research education in higher education is needed. There is a definite disconnect between how students learn about research in the classroom, and how they then experience (or not, as the case may be) research in

action. Unless student nurses are somehow enabled to engage with clinical research nurses in practice, they are not able to capitalise on this valuable learning opportunity. When we teach evidence-based practice in the classroom, we do not teach them about the process that is gone through to generate evidence. We talk about the result, but we do not talk about the process that will have been gone through to get there. We need to have a more conjoined approach, between practice staff and higher education staff to show students the complete picture of how evidence is created, and how research in practice is created and managed. We need to take this approach because registered nurses, even when they are using evidence-based practice, are not always able to articulate which evidence or which studies may underpin clinical decision making. That was clear in the data, where the participants referred to nurse mentors sending them off to “look things up on a computer” whereas medics explained to them which studies supported a particular decision or intervention. There is a real need to compare how research is taught in the classroom and then sustained in the practice area within different professional groups.

We need a variety of different approaches in education to overcome this; currently, there is an obvious gap, where we do not include our research practice colleagues in the classroom delivery of evidence or research content. Whereas, for example, when we teach students about diabetes, we will include experts from practice to share insights into how diabetes care is delivered in practice. We need to adopt a parallel approach for research. There are exceptional opportunities for collaborative working between clinical research nurses and academics; for clinical research nurses to lead on models of co-design and co-supervision of the student experience in practice and for academics to lead on the co-design and co-delivery of research in the classroom.

9.7 Impact of the study.

During this study, 20 student nurses experienced a “research in action” placement at the hospital Trust where this study was based between 2016 and 2018. During 2019, four of the mentors who had taken part in the mentor focus group moved to different posts outside of the clinical research unit and as a result, the unit made the decision to withdraw from the placement directory as it could not support further student placements at that time. Following the suspension of the placement, a restructure of the clinical research unit, and more notably, the clinical research nursing team, was carried out. Secondment opportunities were offered to band 7 staff across the organisation to join the clinical research team to support the research activity which continued in the Trust. Following the appointments of three senior nurses to lead the clinical research nursing team, a meeting was held in November 2019 to explore the possibility of restarting the student nurse placement and to review what the placement should incorporate, taking in to consider the recommendation of my study. At the meeting, I presented the initial findings of my study. Firstly, I shared the findings which showed that students needed to see how the experience of “research in action” could enable them to meet professional values and essential skills in the clinical research unit. Whilst we did not have scope at the time to change the practice assessment document or the on-going achievement record, there were opportunities to create examples of how the student experience in the research unit could be used to show achievement of competency. Secondly, the findings from the study suggested incongruity over the optimum length of stay of the student placement, which required further exploration with stakeholders to suggest viable options. A range of options were 3 explored, considering both the hub and spoke models of placements identified in the study. The concept of making every

placement “a research placement”, where there was active research activity was also explored. Finally, there was agreement at the meeting that a collaborative approach between the clinical research nurses and our university to showcase research activity in tandem with how students learn about research had potential to address how to bridge the research practice gap. It was agreed to reconvene a meeting to include the original stakeholders in my study, and new members of team with an interest in developing a placement pathway for student nurses to engage with research in action. The focus of the meeting would be a full presentation of the findings and recommendations from my study. This meeting was scheduled for March 2020, when very sadly, the NHS was in a state of crisis as it responded to the global pandemic and a national lockdown. All activity in the clinical research unit was cancelled and all staff were redeployed to the front line to assist with the growing number of Covid positive patients being admitted to the hospital. At the time of writing, staff have started to return to their posts in the research unit but have been unable to prioritise reopening a placement pathway for students.

9.8 Conclusion

Whilst the NMC are very clear about research being at the centre of the student nurse curriculum, they do not require students to do research. We are unable to allow undergraduate students to do research. Part time post graduate students often take six months to obtain ethical approval to carry out studies in clinical practice. However, to be able to use evidence, student nurses need to understand how evidence is generated. The data showed that the student participants could not quality appraise and saw the same value in something they had found on Google as with something from a peer reviewed journal they had read online. We need to find more opportunities to share this hidden gem of research in action, with a much wider

audience, and we need to move our students on from an overdependence on Doctor Google.

As I move towards the final stage of this Doctorate and reflect on the various stages of the research journey, I can identify several key learning points. The value in choosing the best research design and carefully constructing the research project cannot be underestimated. Whilst the action research design was fit for purpose, I had underestimated the difficulty and the time implications of recruiting participants. Naively, I had assumed that every student nurse who was on placement in the research unit would participate in my study. I had not considered the possibility that the research unit might not be able to take students sequentially, something which did happen because of unavailability of mentors and students being on blocks of university based study time or holiday. The taught components of the Doctorate, with deadlines and milestones for submission of work and completion of sections of the Doctorate suited my preferred learning style, as someone who is task focused and a completer finisher. The self-directed components provided more of a challenge and taught me the value of planning supervision sessions in advance and managing my expectations in terms of turnaround times for feedback from supervisors on chapters. Early in the doctorate we formed a small student peer support group, initially meeting twice a month to discuss progress and challenges. As a group, we developed strategies to help each member of the group stay focused and on course to meet deadlines. We provided an audience for each other to rehearse presentations for the transition event from MPhil to Professional Doctorate and for the final Doctoral viva. As a support mechanism, this was an exceptionally positive, and perhaps initially underrated, experience which has enabled all of us to successfully complete our studies.

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Appendix 1 – Electronic search history.

Search one

CINAHL search:

nurs* AND student* AND ("research placement" OR "research unit placement" OR "research in action" OR "research utilization")	**Limiters** - Published Date: 20000101-20151231 **Expanders** - Apply equivalent subjects **Search modes** - Boolean/Phrase	View Results (56) | View Details | Edit

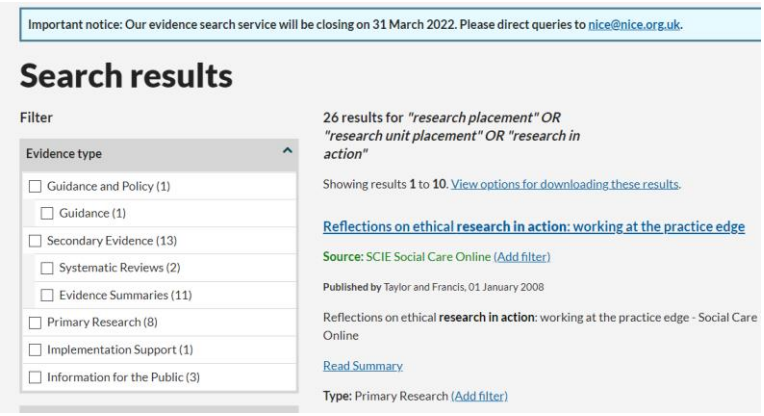
Academic Search Elite search:

nurs* AND student* AND ("research placement" OR "research unit placement" OR "research in action" OR "research utilization")	**Limiters** - Published Date: 20000101-20151231 **Expanders** - Apply equivalent subjects **Search modes** - Boolean/Phrase	View Results (36) | View Details | Edit

Medline search:

nurs* AND student* AND ("research placement" OR "research unit placement" OR "research in action" OR "research utilization")	**Limiters** - Date of Publication: 20000101-20151231 **Expanders** - Apply equivalent subjects **Search modes** - Boolean/Phrase	View Results (35) | View Details | Edit

NICE Evidence search:



Search two.

CINAHL Search:

Search History/Alerts

Print Search History | Retrieve Searches | Retrieve Alerts | Save Searches / Alerts

Select / deselect all | Search with AND | Search with OR | Delete Searches | Refresh Search Results

Search ID#	Search Terms	Search Options	Actions
S2	nurs* AND ("research placement"" OR "research unit placement"" OR "research in action" OR "research utilization" OR "clinical research nurs*" OR "research nurs*" OR "specialty clinical area*" OR "attitudes to research" OR "attitudes towards research" OR "practice development" OR "research and development")	**Limiters** - Published Date: 20000101-20191231; Geographic Subset: Australia & New Zealand, Canada, Europe, USA; Language: English **Expanders** - Apply equivalent subjects **Narrow by SubjectMajor:** - education, nursing **Search modes** - Boolean/Phrase	View Results (505) | View Details | Edit
S1	nurs* AND ("research placement"" OR "research unit placement"" OR "research in action" OR "research utilization" OR "clinical research nurs*" OR "research nurs*" OR "specialty clinical area*" OR "attitudes to research" OR "attitudes towards research" OR "practice development" OR "research and development")	**Limiters** - Published Date: 20000101-20191231; Geographic Subset: Australia & New Zealand, Canada, Europe, USA; Language: English **Expanders** - Apply equivalent subjects **Search modes** - Boolean/Phrase	View Results (14,317) | View Details | Edit

Academic Search Elite:

Search ID#	Search Terms	Search Options	Actions
S13	nurs* AND ("research placement" OR "research unit placement" OR "Research in action" OR "Research utilization" OR "clinical research nurs*" OR "research nurs*" OR "specialty clinical area*" OR "attitudes to research" OR "attitudes towards research" OR "practice development" OR "research and development")	**Limiters** - Published Date: 20000101-20191231 **Expanders** - Apply equivalent subjects **Narrow by SubjectThesaurus:** - nursing education **Narrow by SubjectGeographic:** - canada **Narrow by SubjectGeographic:** - norway **Narrow by SubjectGeographic:** - sweden **Narrow by SubjectGeographic:** - australia **Narrow by SubjectGeographic:** - united kingdom **Narrow by SubjectGeographic:** - united states **Narrow by Language:** - english **Search modes** - Boolean/Phrase	View Results (94) | View Details | Edit
S12	nurs* AND ("research placement" OR "research unit placement" OR "Research in action" OR "Research utilization" OR "clinical research nurs*" OR "research nurs*" OR "specialty clinical area*" OR "attitudes to research" OR "attitudes towards research" OR "practice development" OR "research and development")	**Limiters** - Published Date: 20000101-20191231 **Expanders** - Apply equivalent subjects **Narrow by SubjectGeographic:** - canada **Narrow by SubjectGeographic:** - norway **Narrow by SubjectGeographic:** - sweden **Narrow by SubjectGeographic:** - australia **Narrow by SubjectGeographic:** - united kingdom **Narrow by SubjectGeographic:** - united states **Narrow by Language:** - english **Search modes** - Boolean/Phrase	View Results (3,849) | View Details | Edit

Medline search:

Search ID#	Search Terms	Search Options	Actions
S20	nurs* AND ("research placement" OR "research unit placement" OR "Research in action" OR "Research utilization" OR "clinical research nurs*" OR "research nurs*" OR "specialty clinical area*" OR "attitudes to research" OR "attitudes towards research" OR "practice development" OR "research and development")	**Limiters** - Date of Publication: 20000101-20191231; Language: English **Expanders** - Apply equivalent subjects **Narrow by SubjectMajor:** - education, nursing, continuing **Narrow by SubjectMajor:** - clinical nursing research **Narrow by SubjectMajor:** - nursing staff, hospital **Narrow by SubjectMajor:** - research **Narrow by SubjectGeographic:** - united kingdom **Narrow by SubjectGeographic:** - north america **Narrow by SubjectGeographic:** - maryland **Narrow by SubjectGeographic:** - san francisco **Narrow by SubjectGeographic:** - australia **Narrow by SubjectGeographic:** - europe **Narrow by SubjectGeographic:** - canada **Narrow by SubjectGeographic:** - united states **Search modes** - Boolean/Phrase	View Results (8) | View Details | Edit

S18	nurs* AND ("research placement" OR "research unit placement" OR "Research in action" OR "Research utilization" OR "clinical research nurs*" OR "research nurs*" OR "specialty clinical area*" OR "attitudes to research" OR "attitudes towards research" OR "practice development" OR "research and development")	**Limiters** - Date of Publication: 20000101-20191231; Language: English **Expanders** - Apply equivalent subjects **Narrow by SubjectGeographic:** - united kingdom **Narrow by SubjectGeographic:** - north america **Narrow by SubjectGeographic:** - maryland **Narrow by SubjectGeographic:** - san francisco **Narrow by SubjectGeographic:** - australia **Narrow by SubjectGeographic:** - europe **Narrow by SubjectGeographic:** - canada **Narrow by SubjectGeographic:** - united states	View Results (17) | View Details | Edit

NICE Evidence search:

Search results

Filter

1 filter applied. Clear filter

Evidence type

- Guidance and Policy (8)
  - Guidance (8)
- Secondary Evidence (42)
  - Systematic Reviews (22)
  - Economic Evaluations (15)
  - Evidence Summaries (3)
  - Health Technology Assessments (2)
- Primary Research (1)

51 results for *clinical research nurse or attitudes to research or research and development*

Showing results **1** to **10**. View options for download

You may get better results if you use some of your s
Area of interest : Clinical

The health effects of worksite HIV/AIDS inte research literature

Source: Database of Abstracts of Reviews of Effect

30 April 2000

The health effects of worksite HIV/AIDS interventic literature var _gaq = _gaq || [];

Type: Systematic Reviews (Add filter)

Appendix 2: Charting of scoping review

Study citation	Location	Main subject	Aims	Methodology	Results
Bird et al. (2019)	Canada	Nursing students' perceptions learning in mentored and simulated research practice.	To compare the availability of research experiences, range of data collection types, and satisfaction ratings of nursing students who participated in a traditional MRP (mentor guided research practicum) and those who participated in the SRP (Simulated research practicum).	Evaluation of a quality improvement project using a two-group post test survey design.	Institutions with no research practicum in their curriculum, or with limited access to research placements for students, could consider the use of a simulated practicum as a means of providing experiential learning in research methods.
Carter et al. (2019)	Canada	An Innovative Simulated Research Practicum for Undergraduate Nursing Students.	To describe the innovation (research by Bird et al., 2019).	Commentary	The SRP is an innovative strategy and provides an option when traditional nurse researcher-led projects are not available. placements for students, consider the use of a simulated practicums as a means of providing experiential learning in research.
Coyne and Needham (2012)	Australia	Undergraduate nursing students' placement in specialty clinical areas: Understanding the concerns of the student and	An evaluation of specialty clinical placements for student nurses with an aim to increase our understanding of this type of placement.	Semi-structured audiotaped interviews were undertaken with 7 third-year final semester students and 13 registered	Specialty placements provide a valuable experience for the undergraduate nurse including opportunities to see excellence in teamwork, communication and assessment as well as identifying future intention to become an oncology or renal specialist nurse.

		registered nurse.		nurses, working with the third-year students.	
Einarsen, K.A. and Giske, T. (2018)	Norway	Nursing students' longitudinal learning outcomes after participation in a research project in a hospital.	To gain insight into the long-term outcomes for third-year student nurses after active participation in research during their second year, and what influenced such learning.	Qualitative content analysis.	Supervised active participation in a research project increased student awareness and attentiveness to the subject of study. They found themselves being more constructively critical of their own and other nurses' practice related to the subject matter, as well as more aware of contextual influences. Participation supported and enthused them to become more familiar with research.
Elssborg Foss et al. (2013)	Norway	Describes a model of Collaboration of best practice to promote research utilization in clinical placements.	To evaluate nurses and students experience of using the model to and the impact on nursing care	Questionnaire with open and closed ended questions.	Almost all participants found the model beneficial and was potentially a useful model for teaching students about evidence-based practice.
Green et al. (2017)	Brighton, England	Creation of a protocol for a research placement for mental health student nurses.	To describe the process of creating the protocol.	Commentary	Having a spoke placement in a research unit can improve student nurse's awareness of research.
Harrison (2014)	Leicester,	Exposure of student nurses to	Introducing a placement pathway for student nurses.	Commentary	Students spend a week at NIHR during a cardiology placement. Evaluations

	England	research work.			are part of a wider project (not reported here).
Harrison (2014)	Leicester, England	Enhancing student nurses' experience through cardiac research placements.	Evaluation of a pilot study which provided a pathway placement program, in which second and third-year nursing students spent a week within the National Institute for Health Research (NIHR) Leicester Cardiovascular Biomedical Research Unit (LCBRU).	Web based survey.	The research placement scheme has achieved its aims, with glowing endorsement from students, research staff, CCU staff and the PLLs. The students benefitted from exposure to the wide and varied world of cardiac research, gaining first-hand experience of the contribution clinical research plays in providing the evidence base for practice.
Ledger et al. (2008)	Sheffield, England	Developing clinical research nurses.	Describes a framework for career progression for research nurses in a large acute Trust.	Pilot study.	Pilot highlighted the complexity of the research nurse role and the need for a dedicated lead nurse to work with the directorate across the Trust.
Lee (2011)	Buckinghamshire, England	Student experience of a research placement	Describes a student experience of a placement in a clinical research unit as a very positive and worthwhile experience.	Commentary	Student nurses should take advantage of a placement in a research unit where possible.
McArthur (2014)	Edinburgh, Scotland	Professional issues associated with the clinical research nurse role.	Compares findings of two online surveys permitting analysis of the development of the Clinical Research nurse role.	Comparative study.	Findings show clinical research nurses are highly qualified and experienced. Some had access to professional development whilst more felt isolated. There is a need for clear career structure for clinical research nurses.
Mortenius	Sweden	Creating an	To describe, follow up and	An	The results demonstrated that the

(2014)		Interest in Research and Development as a Means of Reducing the Gap between Theory and Practice in Primary Care.	evaluate a primary care intervention based on strategic communication intended to increase healthcare professionals' interest in R&D over time.	Interventional Study Based on Strategic Communication.	positive attitude to R&D increased over time, representing a first step towards new thinking and willingness to change work practices for the benefit of the patient. Strategic communication has not been previously employed as a scientific tool to create a long-term interest in R&D within primary care.
Naylor et al. (2014)	Liverpool, England	Nursing student placements in clinical research	Describes how research placements were set up in a Trust in Liverpool and the beneficial effects on learning on students who had placements there.	Commentary[8]	Research nurses should be encouraged to set up student placements and student nurses should be encouraged to request these.
Rickard et al. (2012)	Australia	Towards improved organisational support for nurses working in research roles in the clinical setting: a mixed method investigation.	To explore experiences of nurses employed in research positions regarding organisational structures and support for research career pathways and determine what reforms would strengthen an effective research specialisation pathway.	Mixed-methods, cross-sectional approach, using a 104-item survey and semi structured interviews of 11 staff in research roles at an acute care hospital.	Research nurses lack organisational support in many job aspects that they deem important. A management model for the coordination of research nurses within a health district could maximize development of this field. Academic liaison and mentoring for nurses in research, and recognition for effort, are key areas for a management model to target.
Ross and Burrell	USA	Nursing students' attitude toward	Describes undergraduate nursing students' attitudes	Integrative review.	Nursing students have generally positive attitudes toward research and

.

(2019)		research: An integrative review.	toward research.		see the value of research to professional nursing practice. Engaging in a research course or other active research-related activity improves attitudes toward nursing research. More rigorous study is warranted to determine best teaching/learning strategies to enhance students' perceptions of research. Future research is also needed to gain a better understanding of the demographic, academic, and program factors that affect nursing students' attitudes toward nursing research.
Spillisbury et al. (2008)	York, England	The role and potential contribution of clinical research nurses to clinical trials.	Explores the scope and potential contribution of the clinical research nurse role to clinical trials of a nursing-specific topic.	Qualitative focus group study.	The study reveals challenges associated with training and management of clinical research nurses. They are usually associated with trial recruitment and data collection. This study highlights the additional contributions of clinical research nurses for the study of topics specific to nursing as the result of their unique placement in the research centres as informal 'participant observers.' Such observations enhance understanding of the contexts being studied.
Whitehouse	England, UK.	Review of	Report of a Scholarship project	Report.	Development of the Whitehouse -

(2017)		research nursing and midwifery across the UK and Ireland in 2017: Structures, strategies and sharing.	to assist in the development of a nursing and midwifery research strategy at the James Paget University Hospitals NHS Foundation Trust (JPUH). Furthermore, it aimed to review nursing and midwifery research structures and strategies present in other organisations; to share working practices and processes; and to increase international research links.		Smith (2018) model for developing Clinical Research teams. Organisations where senior/executive support for research were more likely to have strong established research networks and research activity and teams.

Register/website findings

Location	Findings
Department of Health	• Report of The Taskforce on the Strategy for Research in Nursing, Midwifery and Health Visiting (DH, 1993). • Research and Development: Towards an Evidence-Based Health Service (DH,1995). • Promoting Clinical Effectiveness; A Framework for Action in and Through the NHS (DH, 1996). • Best Research for Best Health. A new National Health Research Strategy (DH, 2006). • The NHS Constitution (DH, 2013). • The Health and Social Care Act 2012.

EU Legislation	• Legislation on implementation of good clinical practice in the conduct of clinical trials on medicinal products for human use (EU, 2001).
Health Education England	• Investing in people. The Health and Healthcare Workforce plan for England (HEE, 2014). • Developing a flexible workforce that embraces research and innovation. Research and innovation strategy (HEE, 2015).
NIHR	• Our Voices, celebrating the clinical research nurse (NIHR, 2014). • Preparing student nurses for a Research Active Future (NIHR, 2015). • Student nurse research placements insight spring 2015 (NIHR, 2015). • Developing Clinical Research Competence in the Undergraduate Nurse Workforce (O'Neill, 2015). • Our good clinical practice (GCP) courses (NIHR, 2016). • Developing our Clinical Research Nursing Strategy 2017-2020. (NIHR, 2017). • NIHR Research Activity League Table 2018-2019 (NIHR, 2019).
Nursing and Midwifery Council	• Standards to Support Learning and Assessment in Practice Settings. NMC Standards for Mentors, Practice Teachers and Teachers (NMC, 2015).
Royal College of Nursing	• RCN Research Strategy 2007 – 2013 (RCN, 2008).
The Willis Commission	• Quality with compassion; the future of Nursing Education". Report on the Willis Commission on nursing education, (Willis, 2012).

Appendix 3 – Introductory letter and Baseline Survey

Dear student,

I understand that you are a student on the Dip HE adult nursing course, and you will shortly start your placement on Outpatients department. I am delighted to tell you about a new placement opportunity that has just come available and which you have been selected to attend. At the Royal Berkshire hospital, we have several "Hub and Spoke" placements, where students spent the main part of the placement with their first mentor on the "Hub" and then leave for usually one to two weeks to attend the "Spoke".

After recent educational audits, we have been able to identify a new spoke placement for students at the Outpatients department and plan to trial this over the next six months. The placement is in the hospital's Clinical Research Facility, and you will be working alongside the team of Clinical Research Nurses, seeing how they recruit patients to clinical trials, how they collect data, run clinics, work with Consultants on research projects... and lots more. This is a fantastic opportunity to see how evidence is actually generated for real, in practice and to see how research works in the real world.

Embedding research in the student nurse curriculum has been identified as one of the key strategic goals of Health Education England, who oversee the provision of placement areas for student nurses, so you will be right at the forefront of something which is new and innovative and is currently in development for rolling out over the whole of England and Wales.

I really hope that you will enjoy the two weeks with the Clinical Research Nurses, they have a really exciting programme in place for you for your week, which will start on Monday 13th April and finish on Friday 24th April. Your key contact there will be Linda (linda.jones@royalberkshire.nhs.uk) and she asks that you get in touch with her before she goes on leave on April 2nd, she has an induction pack for you with an introduction to the unit which you will find useful to read before you start.

Finally, as this is very new, I am hoping to collect some data - my guess is that students don't know a lot about the role of the Clinical Research nurse, so I have constructed a short poll on Survey Monkey which I'm hoping you will complete at some point this week. It is not meant as a test, just a starting point to see how much our students know about the research facility (it's entirely fine if you know very little!). Click this link to get to the poll https://www.surveymonkey.com/s/9GHFXVS

I am planning to get to RBH during the early part of your placement to see you and see how the placement is going, (I'm the lead for the UWL link Lecturers team) and if you have any queries, please do contact myself or Linda.

Kind regards,
Catherine

Online surveys

PIlot study for student placement in the research unit V2

Showing 12 of 12 responses

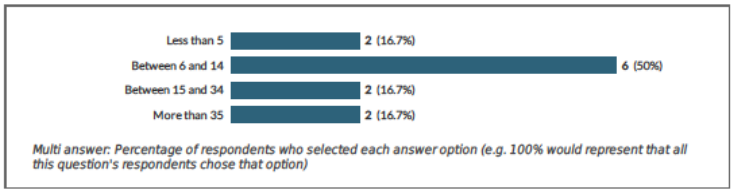
Showing **all** responses

Showing **all** questions

Response rate: 12%

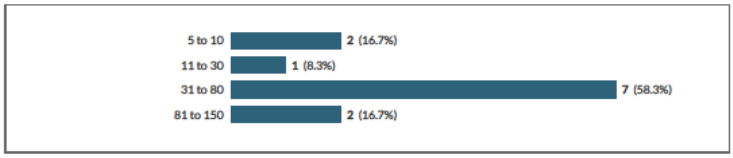
1 Before hearing about this placement, were you aware that the role of Clinical Research Nurse existed in the Trust?

2 How many Clinical Research Nurses do you think are employed at this Trust?



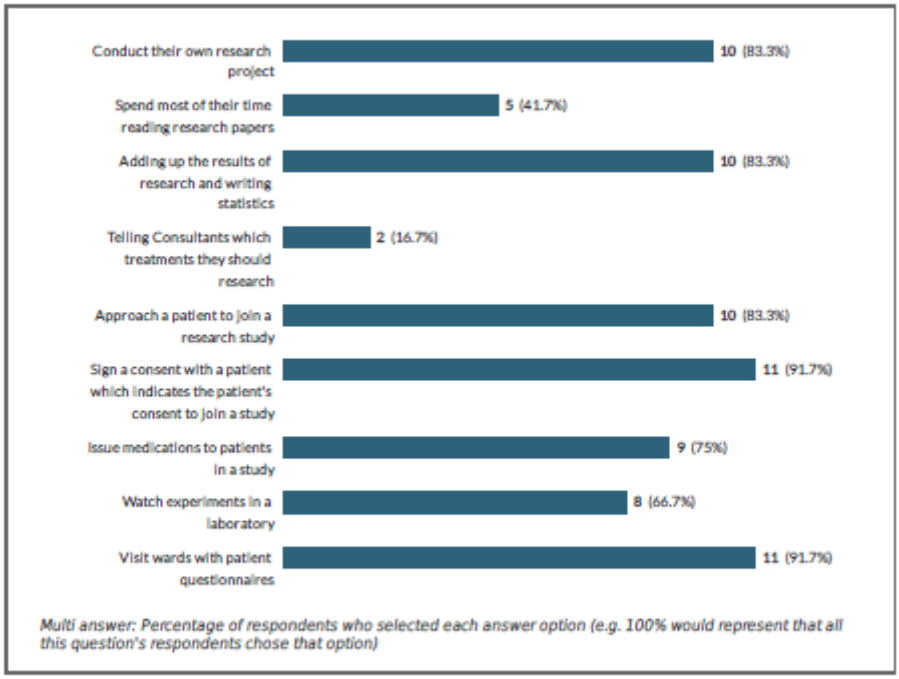
Multi answer: Percentage of respondents who selected each answer option (e.g. 100% would represent that all this question's respondents chose that option)

3 How many Research Studies do you think are currently on-going and managed by the Clinical Research Nurses

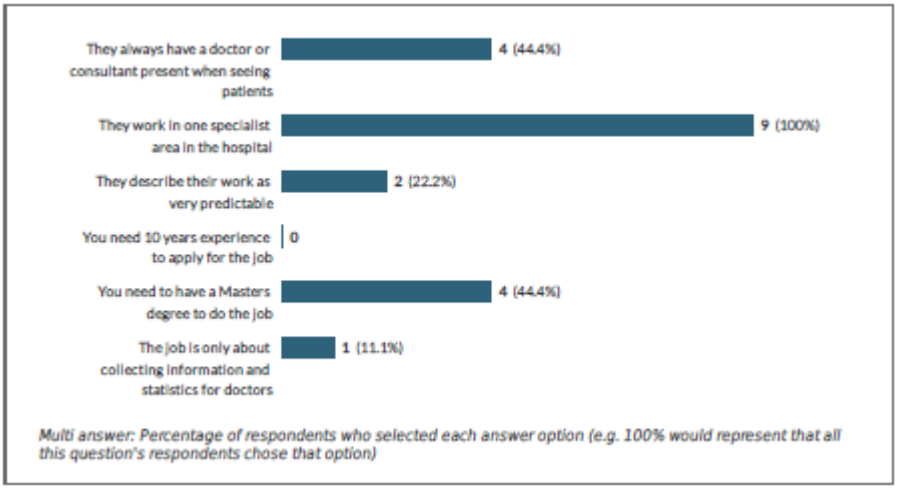


1 / 3

4 Which of the following would you expect the Clinical Research Nurse to do (tick all that apply)



5 What is your understanding of the Clinical Research Nurses role in the hospital? Only click the answers which you think describe the role.



Appendix 4: Grid Diary example

Research Project to determine the impact a placement in the Clinical Research Unit has on student nurses ability to relate theory to practice.

STUDENT DIARY DECEMBER 7, 2017

Did you hear the words "Research" or "evidence based practice" used today?

IN WHAT CONTEXT?
My mentor asked me to undertake a pharmacology review and assessment of a patients drugys (polypharmacy). I was to discuss the medications, their administration and the side effects with the patients wife who administered them to her husband. I was also to asses her understanding competence to do so.

Did you use the words "Research" or evidence based practice today?

PLEASE EXPLAIN
In relation to the task given we discussed EBP around the various medications and their interactions and side effects.

Did you see anything in practice that you think is based on evidence or research?

CAN YOU GIVE SOME EXPAMPLES?
In researching the different medication by using the BNF and the patient information leaflets I could directly relate the incidence of the side effects to research that had made this possible.

Did you see anything that you don't believe there is evidence for?

CAN YOU GIVE SOME EXAMPLES?
Patient reported side effects not related to those in the patient information leaflet but whilst patient thought there was a correlation my mentor did not and though it was unconnected.

Did you see or do anything in practice that your placement in the research unit has helped you understand?

Concomitant medications

Anything else that might help me understand the impact your placement in the research unit has on your practice?

A greater appreciation of research and how it feeds into everyday prescribing.

Research project – C. Lynch **Participant no 003**

Appendix 5: Interview schedule

Themes emerging from diaries to give an interview structure

1. Introduction – general overview of the student's experience in the CRU. *"Tell me about your experience in the clinical research unit".*
2. Details from diaries – anything that needs clarifying
3. Understanding evidence based practice – *"Lets talk about evidence based practice, what do you understand by it? Where does that understanding comes from?"*
4. Applying evidence to practice – *"Can you give me some examples of where you have been able to apply evidence to practice?" "Or can you give me an example of where you saw someone else applying evidence to practice?"*
5. Observations of situations where evidence was not applied *"Did you see anything in practice where you thought there was evidence available for a particular intervention or decision, but it was not used?"*
6. The research process:
    a. Recruiting participants *"Did you see participants being recruited to studies? What were your observations and thoughts on that?"*
    b. Recognising participants *"Did you recognise any patients or clients as being part of a clinical trial or being actively involved in a research study?"*
    c. Visibility of research activity in clinical areas *"Did you see any research activity going on in your clinical area whilst you were completing your grid diary?"*
    d. Visibility of research unit and staff *"Tell me a little about your awareness of the clinical research unit and the clinical research nurse, has that changed at all?"*

After the first 3 interviews, the following was added:

7. Views on the length of *placement "How long do you think a placement in a research unit should be?"*
8. Limitations of the placement *"Looking back at the placement, were there are any limitation of the placement?"*
9. Further exploration how the research placement has affected subsequent placements. *"I'm trying to find out what effect that placement in the research unit has on your subsequent ability to apply evidence and research in practice, how you think it has affected you?"*

Appendix 6: Ethics approval

Ms Catherine Lynch

Student No: 9686811

12th April 2017

College of Nursing, Midwifery & Healthcare
Research Ethics Panel
Paragon House
Boston Manor Road
Brentford TW8 9GA
Tel: +44 (0)20 8209 4110/4145
email: cnmh.ethics@uwl.ac.uk

Dear Catherine

Re: Application for Ethical Approval No. UWL/REC/CNMH-00144

Thank you for sending in your application for approval. The Committee has considered this and approved the research.

If the research does not progress, or if you make any changes to your research proposal or methodology can you please inform the Committee in writing as this may entail the need for additional review.

It is your responsibility, as the principal investigator, to submit a report on the progress/completion of the research twelve months from the date of this letter. The Committee wish you well with your research and look forward to your report.

Yours sincerely

Heather Loveday

Professor Heather Loveday
Director of Research
Richard Wells Research Centre
Joanna Briggs Institute Collaborating Centre
College of Nursing, Midwifery and Healthcare
UNIVERSITY OF WEST LONDON
Paragon House
Boston Manor Road
Brentford,
Middlesex TW8 9GB
Tel: +44 (0)20 8209 4110
e-mail: heather.loveday@uwl.ac.uk
URL: http://www.uwl.ac.uk

Appendix 7: Participant information sheet

UNIVERSITY OF WEST LONDON

Participant Information Sheet

August 23rd, 2017 – Version 2.

Study title: The impact of a placement for student nurses within a Clinical Research Unit

The research is aiming to answer the question: "How does the experience of 'research in action' impact on student nurses' ability to assess clinical research and stimulate their engagement with research and willingness to use evidence to underpin clinical practice?"

Invitation and brief summary

You have had a placement at the Clinical Research Unit at the Royal Berkshire Hospital in Reading. This is very new innovative placement, which previously hasn't been available to student nurses, and I am very keen to understand the impact this placement may have on your future practice.

What's involved?

Whilst you are on a placement **after** your Research Unit placement, I am asking you to keep a diary for two weeks. I have attached the diary template so you can see the kind of information I'm looking to collect, it's all about your experiences and encounters with research and evidence-based practice.

After this I would invite you to a 30-minute interview, either face to face, or by phone/skype/facetime, to talk about your experience and what impact the research placement is now having on your practice.

All the data collected will be anonymous and will be stored electronically on a secure server only for the duration of this study. I am carrying out this research as part of my Professional Doctorate.

Explanation: purpose of and background to the research and invitation

The theory practice gap has long since been a recognized phenomenon in nursing education (Mabbett, 2013) and the more contemporary discussions can be traced back to Government policy driving clinical and nursing education throughout the nineties (Department of Health, 1991; Department of Health, 1993; Department of Health, 1995; Department of Health, 1996). Both students and educators recognise the disparity between the evidence taught in the classroom setting and the subsequent application of that evidence in practice (Seymour et al. 2003). Despite a huge move in healthcare to become "evidence based", the theory practice gap continues to be well documented in the literature (O'Gorman, 2014, Dariel et al. 2014, Kellahear, 2014) and has recently been further defined, perhaps more accurately, as the research practice gap (Lizarondo, 2011). To create a generation and a workforce of research aware and research able healthcare practitioners, a radical rethink of the ways in which that can be facilitated needs to happen. Whilst student nurses and nursing registrants continue to see research as a separate entity to the delivery of healthcare, the gap will prevail.

As a relatively new agency (2006) and now sitting within the structure of NHS England, the National Institute for Health Research, (NIHR) have worked to develop the role of the Clinical Research nurse and to increase the profile and uptake on clinical research work within the NHS. However, they believe that nursing education has been slow to respond to new opportunities to prepare nurses to deliver better care for patients though excellence in clinical research practice. Health Education England (HEE) has explicitly endorsed the combined importance of research and education in their strategy for research and innovation (2014) and their objectives (Figure 1) are closely aligned with the aims of this study, which intends to explore the opportunities which a placement within a Clinical Research Facility, working alongside Clinical Research Nurses, could provide for student nurses.

Please consider carefully if you want to take part in the research, and please discuss any concerns you may have with Catherine Lynch. If you do decide you don't want to take part, there will be no repercussions.

Catherine.lynch@uwl.ac.uk

Telephone: 07867 787277

Appendix 8: Consent form

Centre Number: UWL CNMH

Study Number: UWL/REC/CNMH-00144

Participant Identification Number for this trial:

CONSENT FORM

Title of Project: The impact of a student placement on Clinical Research Unit at Royal Berkshire Foundation Hospital Trust, Reading.

Name of Researcher: Catherine Lynch

	Please initial box
1. I confirm that I have read the information sheet dated 23rd August 2017. (version 2) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights as a student nurse being affected.	☐
3. I agree to take part in the above study.	☐

The outcomes of this research will be made available to all participants.

Name of Participant	Date	Signature

Catherine Lynch

Name of Person taking consent	Date	Signature

Appendix 9: Mentor focus group Participant Information sheet

Participant Information Sheet – Focus Group

December 9th 2018 Version 1.

Study title: The impact of a placement for student nurses within a Clinical Research Unit

The research is aiming to answer the question: “How does the experience of 'research in action' impact on student nurses' ability to assess clinical research and stimulate their engagement with research and willingness to use evidence to underpin clinical practice?”

Invitation and brief summary

All adult nurse mentors who support student nurses during a placement at the Clinical Research Unit are invited to participate. 5 students have been interviewed for the project and themes which have emerged relating to perceptions of the research unit and the research process will be shared with you to get your response and view.

What’s involved?

You will be asked to attend a focus group which will last between 30 and 45 mins. Prior to the focus group I will send you a schedule of questions and some small extracts of

data which will guide the discussion. Each focus group will be facilitated by myself and audio recorded to allow accurate analysis of the data. All the data collected will be anonymous and will be stored electronically on a secure server only for the duration of this study. I am carrying out this research as part of my Professional Doctorate. This is an action research project and the first and second round of data has been analysed and had indicated that speaking with the student's mentors will provide further clarity and direction for the outcomes of the project.

Please consider carefully if you want to take part in the research, and please discuss any concerns you may have with Catherine Lynch. If you do decide you don't want to take part, there will be no repercussions.

Catherine.lynch@uwl.ac.uk

Telephone: 07867 787277

Appendix 10: Mentor focus group Consent Form

Centre Number: UWL CNMH

Study Number: UWL/REC/CNMH-00144

Participant Identification Number for this trial:

CONSENT FORM

Title of Project: The impact of a student placement on Clinical Research Unit at Royal Berkshire Foundation Hospital Trust, Reading.

Name of Researcher: Catherine Lynch

	Please initial box
4. I confirm that I have read the information sheet dated 10th December 2018 (Version one) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
5. I understand the study involves a focus group which will be conducted by Catherine Lynch.	☐
6. I understand that the focus group will be audio recorded and transcribed.	☐
7. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	☐
8. I agree to take part in the above study.	☐

The outcomes of this research will be made available to all participants.

Name of Participant	Date	Signature

Catherine Lynch	10th December 2018	
Name of Person	Date	Signature