EXPLORING THE RESEARCH CULTURE OF NURSES AND ALLIED HEALTH PROFESSIONALS (AHPS) IN A RESEARCH FOCUSED AND A NON-RESEARCH FOCUSED HEALTHCARE ORGANISATION IN THE UK

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Exploring the research culture of nurses and Allied Health Professionals (AHPs) in a research focused and a non-research focused healthcare organisation in the UK

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ABSTRACT

Exploring the research culture of nurses and Allied Health Professionals (AHPs) in a research focused and a non-research focused healthcare organisation in the UK

There is a gap in the knowledge about the research culture of nurses and Allied Health Professionals (AHPs) in the UK, and the influence of a dedicated research strategy and funding. It is important to understand the culture in order to effectively promote evidence-based patient care. The primary aim of this research was to explore the influence of research focused exposure on the research culture of nurses and AHPs in the UK and identify if there was a difference in the research culture between a research focused and non-research focused clinical area (City and Riverside Hospitals). This is a unique and novel study that explored and compared the research culture stance of both AHPs and nurses. A mixed methods design was used in this study. Tools used included the 'Research Capacity and Culture Tool' as an online survey, three focus group discussions and 5 semi-structured interviews with senior managers. Focus groups included research naive groups from both hospitals and a research active group from City Hospital. There were 224 responses received from 941 surveys with a 24% response rate. Descriptive statistics of the survey results indicated that there was a difference ($p=0.001$) in the mean score of the research culture between City Hospital (5.35) and Riverside Hospital (3.90), but not between nurses and AHPs ($p= 0.12$). Qualitative data findings from the framework analysis were congruent and supported the survey results. The results provided empirical evidence to support a whole level approach in order to improve the research culture. The findings showed that there may not be any difference in the research culture between professional groups. Importantly, new evidence is presented to suggest that there were crucial communication issues which were hampering the research culture and there was a lack of support at the middle

management level which needed to be tackled to improve the research culture of nurses and AHPs. The study highlighted the need to include communication within the Cooke's Framework if evidence based practice is to influence the quality of patient care.

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GLOSSARY

AHP: Allied Health Professionals

AHSCs: Academic Health Science Centres

AHSN: Academic Health Science Networks

AUKUH: The Association of UK University Hospitals

BRC: Biomedical Research Centre

BRUs Biomedical Research Units

CLAHRC: Collaborations for Leadership in Applied Health Research and Care

CNO: Chief Nursing Officer (CNO),

CRN: Clinical Research Network

DGH :District General Hospital

DOH: Department of health

ESRC: Economic and Social Research Council

GafRec: Governance arrangements for research ethics committees

HRA: Health Research Authority

HEE: Health Education England

HEFCE: Higher Education Funding Council for England

JCR: Journal Citation Report

LETB Local Education and Training Boards

NHS: National Health Services

NICU: Neonatal Intensive Care Unit

NIHR: National Institute for Health Research

NMAHP: nursing, midwifery and Allied Health Professionals

NMC: Nursing and Midwifery Council

OT: Occupational Therapist/Therapy

PhD :Philosophy in Doctorate

R&D : Research and Development

RCB: Research Capacity Building

RCC: Research Capacity and Culture

RCN: Royal college of nursing

RDSU: Research and Development Support Units

UKCRC: United Kingdom Clinical Research Collaboration

1   CHAPTER 1: INTRODUCTION

The National Health Service (NHS) in the United Kingdom (UK) has always been under pressure to improve patient care despite limited resources. This was highlighted by the Francis Report (2010, 2013) which focused on how the set-up of the entire health and social care system in England could aid or hinder nurses and other staff to deliver quality patient care. It illustrated the culture of the NHS and the impact it has on the ability of staff to raise concerns. Following the Francis Report (2010; 2013), the Nursing and Midwifery Council (NMC) produced a response clearly indicating that, first and foremost, the responsibilities of all nurses are to care for, and to safeguard the public. The NMC(2013) stated that, through autonomous practice, nurses should be responsible and accountable for providing a safe, compassionate and person centred, evidence-based nursing care that respects and maintains a patient's dignity and human rights (NMC 2013). Subsequently, a knowledge and innovation action plan for 2014-2018 by the Royal College of Nursing (RCN 2014) recommended that nurses need to be developed through knowledge and innovation in order to transform patient care. Meanwhile, the NHS had continuously highlighted the importance of professional development, evidence-based practice, and healthcare policy changes. In fact, the NHS constitution by the Department of Health (DOH) (DOH 2013a:3) stated that the principles of the NHS involve a

> "Commitment to innovation and to the promotion and conduct of research to improve the current and future health and care of the population".

Furthermore, the need for patient centred, compassionate and well informed care was highlighted by many of the national reports such as Willis (2012), Francis (2013), Berwick report by the National Advisory Group on Safety of patients in England (2013), Keogh (2013) and Bubb (2014). Moreover, in 2014 Health Education England (HEE) in partnership with the Nursing and Midwifery Council

published a Research and Innovation Strategy for all healthcare staff, 'The shape of Caring Review' aimed to build on its recommendations (Willis 2015). These initiatives had moved research activity and productivity up the healthcare agenda in order to improve patient outcomes. However, it was almost impossible to measure or correlate patient outcomes with research output or productivity because research output was measured using traditional measures of high quality research. These were publications, seminars' presentations, successful grant applications, research funding obtained and fellowships. Cooke (2005) stated that in any research focused organisation, research productivity is measured in terms of its output such as number of publications and funding from successful grants.

According to the North American Primary Care Research Group (2002), the most commonly used research measures are journal publications and presentations at conferences, successful grant applications and academic qualifications. Healthcare Organisations are always under pressure to improve these measures. Furthermore, Carter et al. (2000) indicated that these traditional research output measures are only suitable for evaluating some of the many possible objectives of research initiatives and research focused activities. However it can be argued that there needed to be additional measures or indicators that assessed or evaluated diverse aspects or objectives of research interventions hitherto. These added measures would therefore enable the organisation to take the responsibility to further develop a healthcare community with a culture that promoted research and active participation in research activities; which implemented outcomes and thus demonstrated efficient evidence based practice. In other words, organisations should strive to develop a culture that promotes research, because if the culture is absent, it can result in reduced productivity and lower use of research evidence and research funding (Closs and Cheater 1994; Jootun and McGhee 2003; Rizzo Parse 2007, McNicholl et

al.2008; Cheek and Radoslovich 2009). Moreover, the measures used do not directly relate to patient care. In order to make any meaningful connection between these two, we needed to understand the research culture of the staff who provide direct patient care at the bedside including both nurses and Allied Health Professionals (AHPs).

The medical profession has historically been considered to be a research focused profession with a research culture and mind set. Klein (2001) indicated that the medical profession colonised the health care research agenda since its inception (1948) and was under pressure to eradicate poor practice by underpinning their practice with a solid scientific foundation. McMahon (2008), in her introduction to 'the politics of innovation: a critical analysis of the conditions in which innovations in health care may flourish',   stated that it would be difficult to destabilise that power base. Approximately 6% of the medical workforce in the UK are clinical academics who spend time involved in direct patient care, whilst also undertaking research and teaching future generations of doctors. Around half of these individuals hold Clinical Professorial posts, which represent 3.4% of the medical workforce as a whole, with the remainder in training grades, developing their clinical expertise alongside their research and academic skills (Fitzpatrick 2013). However, there remained little empirical evidence about how effective the research culture was of non-medical staff such as nurses and AHPs. Hence this study explored the research culture of nurses and AHPs based in two hospitals in the Northwest of England. One of the hospitals was research focused and the other was non- research focused. For clarity and to protect anonymity the research focused organisation in this thesis is referred to as 'City Hospital'. The most research active division of City Hospital is represented in this study as the 'Seacole Division'. Figure 1:1 illustrates the structure of the hospitals and groups used in this study.

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┌─────────────┐              ┌─────────────┐
│  Research   │              │ Non-research│
│  Focused    │              │  Focused    │
└──────┬──────┘              └──────┬──────┘
┌──────┴──────┐              ┌──────┴──────┐
│City Hospital│              │  Riverside  │
│             │              │  Hospital   │
└──────┬──────┘              └──────┬──────┘
       │                            │
       ▼                            ▼
┌─────────────┐              ┌─────────────┐
│  Ward   A   │              │   Ward B    │
│  Seacole    │              │             │
│  Division   │              │             │
└─────────────┘              └─────────────┘
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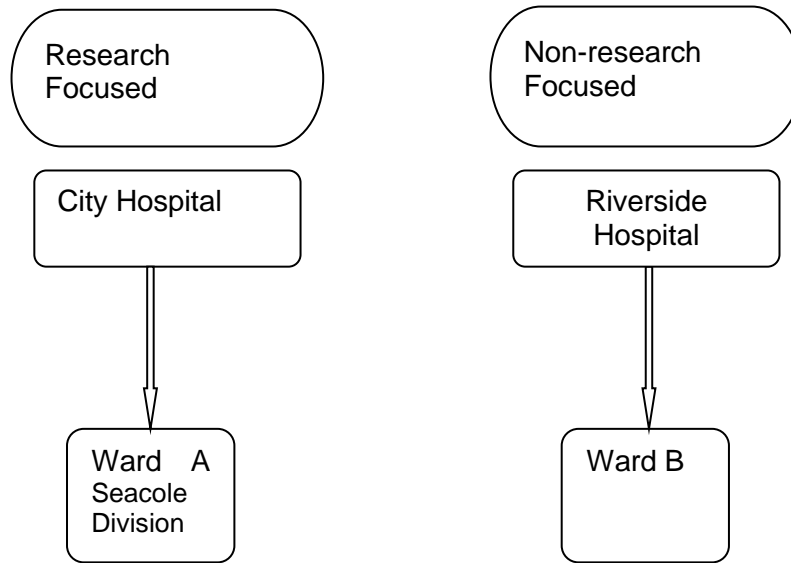
Figure 1:1 Areas used in this study

For the phase 1 survey, all the staff from the Seacole Division of City Hospital were contacted. The ward used for the focus group discussion from the Seacole Division was designated as ward A. The non-research focused hospital was labelled as the 'Riverside Hospital'. Riverside Hospital was a small district general hospital, which was only the size of the Seacole Division at City Hospital. The ward used for the focus group discussion in Riverside Hospital was called ward B for the purpose of this study.

Both City and Riverside Hospitals had multi-disciplinary teams who were contacted for the focus group discussion in Phase 2 of the study. Multi-professional staff focus group are part of a pre-existing organisational structure on the wards where staff members from different disciplines joined together to discuss the care of the patients, especially their follow up care and discharge care. These were named as the 'research naive group' for the purpose of this study. These teams were based in a clinical ward area with more focus on clinical work and pressures while also having less exposure

to research. These groups were used from Ward A of the Seacole Division and Ward B from Riverside Hospital.

There was a separate multi-professional research group, named as the 'research active group' at City Hospital, who also took part in the focus group discussions. The research active group is set up in City Hospital with the purpose of supporting staff who are actively involved in research or who would like to be involved in research. They also aimed to provide peer support for study and research, and to address or solve the difficult problem of integrating research activities into their clinical role. The group had been in existence for 3 years before the start of this study. In this group, the staff were either completing, or had completed a postgraduate degree with an aim to develop a community of nursing, midwifery and AHP researchers throughout the Hospital.

The phase 3 of this research also included semi-structured interviews with the senior management team of the nurses and AHPs from both hospitals. They were the Chief Nurse of City Hospital, the Heads of Nursing for Riverside Hospital and Seacole Division , the Head of AHPs for City Hospital, and the Professor of Nursing and AHPs for City Hospital. These semi-structured interview participants were named as participants 1, 2, 3, 4 etc. irrespective of their job title in order to maintain confidentiality. There was a log maintained with each interviewee title and participant number. The log will not be reported in this study in order to protect the anonymity and confidentiality of the participants. Table 1.1 is an illustration of the clinical areas involved and how they are represented in this study. Table 1.1 is reproduced in each chapter as an aide memoir, so that it can be used as a guide to refer to when reading the chapters.

Areas and Participants	Representation in the study
Research focused organisation	City Hospital
Largest research active division of the research focused organisation	Seacole Division.
Ward used for focus group discussion of the research focused organisation	Ward A
Non-research focused organisation	Riverside Hospital
Ward used for focus group discussion in the non-research focused area	Ward B
Multi-disciplinary teams in both research focused and non-research focused organisations used for focus group discussion	Research Naive Group
Multi-professional research group	Research Active Group
Senior management team Chief Nurse of the research focused organisation, Head of Nursing for research active division of the research focused organisation and non-research focused organisation, Head of AHPs for Research focused organisation, Professor of Nursing and AHPs, research focused organisation	Participant, 1,2,3,4 etc. irrespective of the order and title.

Table 1:1 Areas, participants and their representation

1.1   Study Population

Nurses and AHPs of a research focused and non-research focused hospital were the study population in this thesis. 'Allied Health Professionals' (AHP) is a term used to represent a different group of health care professionals including occupational therapists, physiotherapists, dieticians and social workers with a clinical focus. Nurses and Midwives were commonly grouped together in this thesis as 'Nurses'. This study was not particularly focused on midwives as a separate group and no midwives were included in the study as there were no midwives in the study areas. For the purposes of this study the term 'Multi-professional' is used for the focus groups to include

any registered healthcare practitioner, excluding doctors. The reason for excluding doctors was that, as explained later in the literature review, nursing, midwifery and AHPs were the professionals reported as needing to increase research capacity, and have the lowest research skill and activity base (Mant 1997, Albert and Mickan 2003). Another reason was that the study was aimed at nurses and AHPs and not physicians.

Clinical research nurses and nurse researchers already existed in City Hospital at the time of data collection. However, they were not involved in the study to avoid bias as they were considered to be more research active and research aware compared to other nurses. According to UK Clinical Research Collaboration (UKCRC), clinical research nurses are employed specifically for research within the clinical environment (UKCRC 2007, 2009). These jobs do include other clinical duties, although research is the main role and an important part of their employment (UKCRC 2007, 2009). According to Green (2011), clinical research nurses are important in clinical research because they recruit participants to studies, provide care, follow-up care and are involved in planning, coordinating and implementing research studies. On the other hand, a nurse researcher is a nurse who has conducted and led their own research on various aspects of health issues; they have designed and implemented their own studies and tried to find out ways to improve healthcare using research evidence. According to Health Career (2015) research questions are identified by nurse researcher and, based on these questions; they design and conduct studies, collect data and analyse them to obtain the results, and then report their results. These two groups of nurses would be more exposed and involved in research and may have a research culture embedded in their job. Hence, their exclusion from in this study.

1.2 Background

The NHS in the U.K. has undergone considerable policy changes since 1988 when the Department of Health (DOH) was formally created. The DOH introduced a strong emphasis on research and its integration into the clinical setting (House of Lords Select Committee on Science and Technology 1988;DOH 1991;1993a; 1994; 1997; 1998; 2000a; 2001; 2004a;2004b;2004c; 2005a; 2015). According to the DOH (2013a), research was one of the core functions of the NHS as is stated in its constitution. The constitution confirmed the commitment of the NHS, throughout the England, to promote and conduct research to improve the health and social wellbeing of patients and their quality of care. The UK NHS Research and Development strategy, 'Best Research for Best Health' (DOH 2006) was aimed at making the NHS an internationally recognised research excellence centre. To this end many changes have occurred within the organisational structures. For instance, there were significant amounts of investment in research and infrastructure within the NHS. This strategy highlighted that people who are responsible for giving direct patient care, including nurses and AHPs should be research active. Later in July 2010, The NHS White Paper, 'Equity and Excellence: Liberating the NHS' set out the Government's long term vision for the future of the NHS (DOH 2010). This report suggested that there was a commitment from the Government to promote and conduct research as a core NHS role. It also stated that the DOH should provide continuous support to promote the role of Biomedical Research Centres (BRCs) and Biomedical Research Units (BRUs), Academic Health Science Centres (AHSCs) and Collaborations for Leadership in Applied Health Research and Care (CLAHRC), in order to develop research in healthcare by unblocking the synergies between research, education and patient care (DOH 2010).

In 2006, the National Institute for Health Research (NIHR) and the clinical research networks (CRNs) were formed with a vision to improve the health and wealth of the nation through research. The

structure of NIHR is presented in Figure 1:2 within this chapter (NIHR 2015d). Biomedical Research Centres (BRCs) were an important element for achieving this mission. In addition, the NIHR funded these BRC centres to drive progress in translating innovation in biomedicine into clinical practice; to maintain and improve the quality of patient care and safety standards (NIHR 2015a). These research initiatives would also have influenced the Research Capacity Building (RCB) and the research culture of those who were actively involved in clinical care such as nurses and AHPs along with medical professionals. Both RCB and research culture are expanded upon in chapter 3 and 4. Through CRNs and BRCs, it was envisaged that nurses, midwives and AHPs would have more opportunities to become involved in research.

As stated in the 'The NHS Constitution – The NHS Belongs To Us All' (DOH 2013a), the NHS should be committed to research promotion and conduct to improve patient and population health care. The Constitution also highlighted that patients should be provided with information about their area of clinical research. Moreover, the NHS Research and Development Strategy (2013-2018) emphasised that all the NHS staff should promote and inform patients about research and given an opportunity to participate in research when available (NHS England 2013). NHS staff including nurses and AHPs should be knowledgeable about the research studies happening in their organisation and hence they should have a research capacity and research culture.
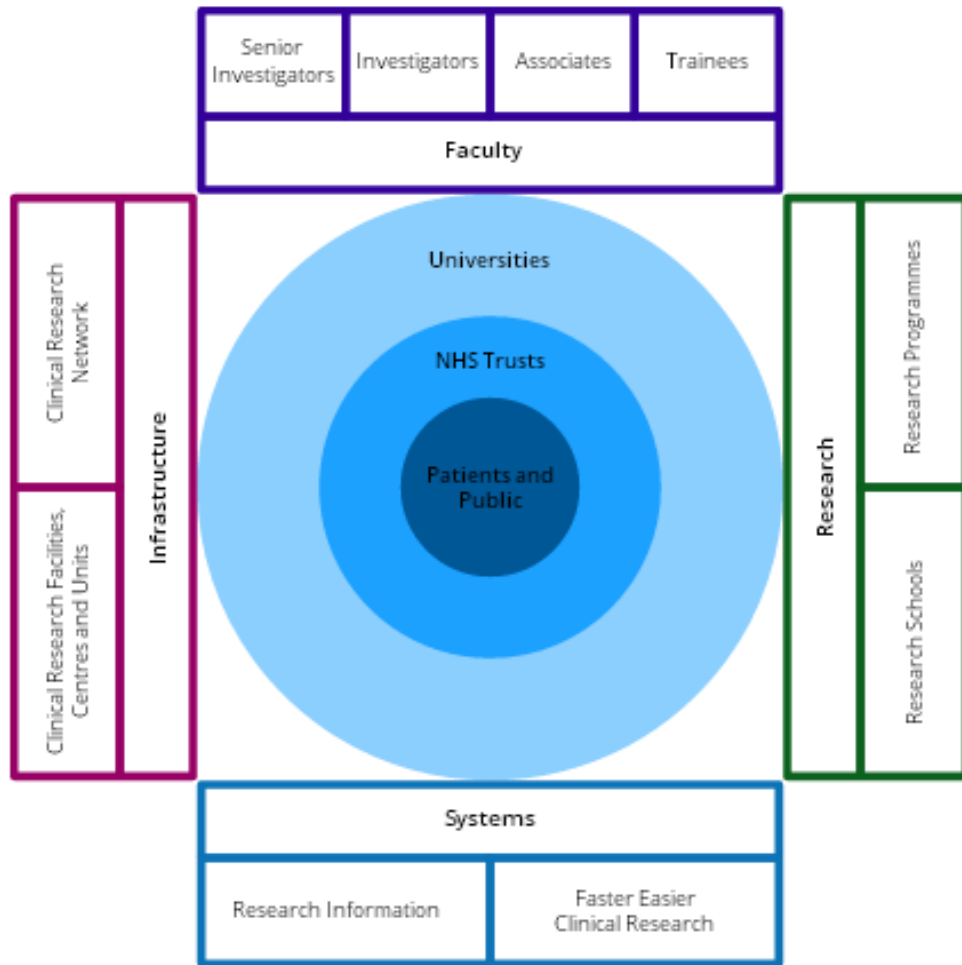
Figure 1:2 NIHR structure (NIHR 2015d)

In order to increase the research activity of nurses and AHPs, the Chief Nursing Officer (CNO), the Economic and Social Research Council (ESRC) and the Higher Education Funding Council for England (HEFCE) jointly formed an Integrated Clinical Academic Training Programme for nurses and AHPs. The training programme included an internship, a master's programme (Research Methods) followed by doctoral, post-doctoral and senior clinical lectureship awards (NIHR 2015c). These opportunities were opened up to all the nurses and AHPs in every NHS organisation including City Hospital. Also, locally, City Hospital developed its own 'Nursing, Midwifery and AHP (NMAHP) strategy' with its own objectives and activities along

with significant research funding which is described in later parts of this chapter. This study explored whether these opportunities and changes helped in changing the research culture of nurses and AHPs. Before describing the details of this study, it is important to define exactly what a 'research culture' means which will be discussed next.

1.3 Research culture

Before looking at the definitions of research culture, the term culture itself is defined in this section. There are many definitions in the literature on culture .However; the ones which are related to this study are explained here. Hofstede (2001: 9) defined culture as

> *"The collective programming of the mind that distinguishes the members of one group or category of people from another".*

This definition of culture helped to differentiate the culture of one group from that of any other groups and hence helped to differentiate the research culture between two organisations. In other words, the research culture of the research focused organisation should subsequently distinguish its staff from the non-research focused organisation.

According to Johansson (2000) an individual's behaviour is guided by an underlying value framework, named as the culture. For example, in research culture, an individual's behaviour, responses and personal relationships, conducts and interaction will be reflected by research knowledge. There are many definitions for research culture. Cheetham (2007: 5) stated that,

> *"The research culture is the structure that gives [research behaviour] significance and that allows us to understand and evaluate the research activity".*

According to the Hanover Research Report (2014: 5),

"A culture of research can provide a supportive context in which research is uniformly expected, discussed, produced, and valued".

However, an alternative definition of culture provided by Hauter (1993:14) can be interpreted for research culture as:

"the many, often subtle, 'point-sized' rules and customs of research activity picked up and repeated by organisational members until their actions 'blend' into a collective attitude. Within any community the accepted research culture - even if it is unconsciously accepted by many - defines how each individual should think, act and make decisions about research".

Research culture was a hot topic of debate amongst academics, policy makers and regular discussions in scientific forums (Altbach 2009). Wagner (2005) defined research culture as an environment where research is valued in an organisation and this is indicated by their own leadership, incentives, resources and available technologies. Bland & Ruffin (1992) explained that research culture is a factor that influences the research productivity environment. Hill (1999) suggested that the teaching values and styles of an organisation may be reflected in its teaching culture and similarly management values may be reflected in the management culture. Therefore in a research focused organisation, research culture should reflect the values, ideals and beliefs about research.

It can be summarised from these definitions that research culture is made up by people's beliefs, attitudes and values about research. In other words, it is a way of thinking, perceiving, understanding and acting about research, which reflects the values, ideas and beliefs

about research within the organisation. Moreover, the definitions say that the research culture focus would be reflected in the behaviours and actions of the organisation's own staff; and therefore it would be important to understand the relationship between the research focus and research culture. Hence, this study would help an organisation to find out about their research culture. Moreover, this study would be relevant for the health care research and would have the potential to inform the research debate.

A research culture is essential to building research capacity and research capacity building fosters research culture (Wilkes and Jackson 2013).MAY According to the Oxford dictionary, the term capability is defined as the power or ability to do something, and capacity is the ability or power to do or understand something (Oxford dictionary 2015a, 2015b). This thesis had used capacity more as it focuses on an individual's ability to do or understand research. The development and maintenance of abilities and skills to perform high quality research is defined as RCB (Trostle 1992; North American Primary Care Research Group Committee on Building Research Capacity and the Academic Family Medicine Organisations Research Sub-Committee 2002; Albert and Mickan 2003). The DOH has adopted the definition of RCB promulgated by Trostle (1992:1321) and this definition was used in this thesis too. The definition is as follows:

> 'A process of individual and institutional development which leads to higher levels of skills and greater ability to perform useful research".

Through RCB, individuals get an interest in research and research related activities. They also facilitate and initiate research activities within their clinical work place or organisation (Bäck-Pettersson 2008). This would therefore result in research culture. Moreover, by keeping informed about the research developments and research

activities, staff members facilitate RCB (McKenna and Mason 2008). RCB also helps to understand and implement research findings (Wilkes et al 2013). Wilkes and Jackson (2013) cited that a research culture may involve an organisation constructing an environment that enables and supports creative work to generate new knowledge that provides researchers with opportunities to interact and grow. It can be therefore concluded that research culture is clearly interlinked with RCB.

1.4   Research culture of nurses and AHPs

When the funding and developments in medical research were compared historically with nurses and AHP's, it can be observed that there has been less investment in research activity for these professionals in the UK (Rafferty and Traynor 2003b). Moreover, unlike other healthcare professionals, the research culture and research capacity of Nurses and AHPs has been under-researched and has been recognised as an international issue by several countries including Australia, Unites States of America and UK (Albert and Mikan 2003; DOH 2000b; Frontera et al. 2005; Segrott et al. 2006). The Association of UK University Hospitals (AUKUH) Clinical Academic Careers Group Annual Report (2011-12) stated that there is an embedded culture in medicine which acknowledged that clinical academics and clinical academic leaders are essential to the vision of implementing evidence-based medical practice (AUKUH 2012). This implies that medics have a more dominant research culture. However this research focus and culture was not historically evident in nursing or in the allied health professions. In other words, nurses and AHPs were the professionals most often reported in the literature as being in the greatest need for increased research capacity, due to their weaker research skill and activity base (Mant 1997; Albert and Mickan 2003).

In order to increase research awareness and RCB to improve research output, research was introduced in the nursing curriculum

for nurses in the UK and the minimum award for pre-registration nursing programmes in the UK was raised to degree-level and this was approved by NMC in September 2008 (NMC 2008; 2010). This was already established in Wales, Northern Ireland and Scotland. In 2013, nursing became an all graduate UK profession. Loke (2014) stated that this strong emphasis on research was introduced at both undergraduate and post graduate levels internationally. According to Girvin and Hayter (2013), the quality of patient care will be improved by the increased knowledge and expertise of the graduate nurses obtained from their graduate nursing training; and will contribute to research and innovation. In November 2014, the NIHR held a seminar exploring clinical research competence in the undergraduate nursing workforce. The seminar report and recommendations written by Fiona O'Neill from the NIHR-CRN (O'Neill 2015:3) suggested that:

> *"Universities should be able to demonstrate how they are responding to these drivers through the development of the curriculum so that nurses are confident to offer research opportunities at points of care and understand the role that life sciences play in supporting health and wealth in the UK"*.

These initiatives indicated that in recent years, efforts have been made locally, nationally and internationally to increase the research capacity and hence the research culture too, for nurses and AHPs in the NHS. However, the research culture of the healthcare organisations remains unexplored. The need for a positive research culture was recognised in the literature as being crucial to research performance and evidence-based practice (Cleary et al.2011). However, the existence of a research culture was largely taken for granted. Though there were some studies aimed at understanding research capacity and culture in health professions (Sarre and Cooke 2009; Lizarondo et al.2011; Trostle 1992; Patel et al.2011; Wilkes et al. 2013a, 2013b), there still existed a gap in measuring and evaluating the research culture.

Nurses and AHPs are the frontline staff providing direct patient care along with medical professionals. However, as explained earlier, the medical profession was historically research driven while nurses and AHPs have shown a research focus in the last decade. Therefore, the research culture in nurses and AHPs needed to be explored and recognised for establishing the effectiveness of promoting research in the health care organisations. Hence, this study was conducted in a research focused and non-research focused organisation; to explore and measure nurses' and AHPs research culture, perceptions of their research skills and their experiences of research activities, and to determine if nurses and AHPs saw themselves as being able to conduct research, talk about research and use research evidences in their clinical practice. In summary, this thesis explores the current research culture, highlights the barriers and motivators, and identifies any gaps in developing a research culture within healthcare organisations so that these can be addressed in the future.

1.5   Context of the study

City Hospital in this study was a large teaching hospital with university links. The main area used for this study within City Hospital was the Seacole Division. A division in a hospital was a group of specialities/department grouped under one operational management umbrella. Seacole division has always been a part of City Hospital where the BRC and NMAHP research strategy were implemented. However, Riverside hospital did not have any research vision or research strategy. At the end of 2012, Riverside Hospital joined City hospital. Prior to joining City Hospital, Riverside Hospital had been a District General Hospital and a separate entity with its own organisational and management structure. Hence it has not had any input from the research strategy or BRC. After joining City Hospital, Riverside Hospital became a division. Therefore it was an ideal

opportunity to compare both areas and attempt to differentiate the research culture between a research focused area and non-research focused areas.

City Hospital is comprised of different hospitals for different specialities such as dental, ophthalmology, medicine and surgery, paediatrics and midwifery. The Seacole Division had more than 600 beds and around 99678 inpatients per year. It covered the different specialities within medicine such as neurology, gastro-enterology, respiratory medicine, emergency medicine, acute medicine, geriatric medicine, stroke, renal and cardiology. The reason for selecting the Seacole division of City Hospital was that, it was one of the most research active divisions in City Hospital and also had different directorates of specialities. Also, the Seacole Division was part of City Hospital pre and during BRC. However, Riverside hospital joined City Hospital after the BRC and hence was not part of a research focus from BRC or via a research strategy. Riverside hospital was a district general hospital, providing health care to the people living in its own region. It had a number of specialities such as cancer, radiology, surgery, gastro-enterology, gynaecology, haematology, laboratory medicine, dentistry, stroke services, neurology, orthopaedics, ophthalmology, pathology and pharmacy, respiratory, rheumatology, urgent care and urology.

The numbers of nursing and AHP staff in both areas (Seacole n=541 and Riverside Hospital n=400) were similar giving a reasonable comparison in the study. As well as the BRC and NMAHP strategy, City Hospital also had a dedicated Research Division and a Research and Development Department. Riverside Hospital was similar in size to the Seacole division with 530 beds and 95975 in-patients a year.

City Hospital is one of the major providers of tertiary and specialist healthcare services in the UK and it has treated more than a million

patients each year. It has a strong vision and mission for research and has introduced many initiatives to increase research capacity and to improve research culture since 2008. The initiatives included direct DOH funding, financial support from external agencies such as universities, city councils and regional developmental agencies. This included the appointment of senior research managers, who were managing research for each clinical divisions of the organisation and their remit was to focus on planning, commissioning and developing research. These had been a significant input from the DOH and the NIHR by awarding BRC status to City Hospital from 2008. Therefore in this study, 2005-2008 is considered as pre-research focus and 2008-2012 as post-research focus. Moreover, as explained in the earlier section, a number of other frameworks and strategies were implemented such as NMAHP research strategy to increase the research capacity and to change the research culture. The outcome for this strategy, and research focus on the research culture of its own staff were unknown; as this research culture was not explored or formally evaluated.

As mentioned earlier in this chapter, traditionally research capacity and outputs were measured by academic outputs such as the number of publications and its citations, conference and seminar presentations, PhDs and Fellowships, collaborations and grant funding (Patel et al.2011). However these traditional measures do not reflect the whole picture of research activity. This was an important area for research as there were gaps in the evidence, which might need to be assessed and addressed in order to identify, understand and measure the whole picture of its research activity (Cheetham 2007). To understand and obtain a clear picture of the overall research culture of a profession or organisation, more contemporary measures need to be combined with the traditional research output measures. Moreover, traditional measures may not reflect the eclectic and diverse nature of nursing and AHP research as these disciplines have different professional goals and clinical

rationale for the research they do. Little is known about the research culture of nurses and AHPS, and whether the culture is different between a research focused centre and a non-research focused centre.

The results from this study will provide a baseline for understanding the current level of research culture of nurses and AHPs in both City Hospital and Riverside Hospital. This will also help to explore and measure nurses and AHPs research culture, their perceptions of their research skills at different levels such as individual, team and organisational and their experiences of research activities. In short, this study tries to bring to light any gaps in developing and sustaining a research culture within healthcare organisations so that these can be addressed in the future.

1.6   Concept of the study

In order to understand the back ground and motivation for this research, it would be beneficial to provide some information on the researcher of this thesis. The researcher in this study was amongst one of the first Indian nurses who migrated to UK in early 2001, after completing her B.Sc. (Hons) Nursing from All India Institute of Medical Sciences (AIIMS). As part of the degree, the researcher undertook her first research project and was very much interested in getting involved in further research activities (Luckson 2000). After coming to UK, she had completed her Masters in nursing studies from Manchester University and undertook her second piece of research as part of the course (Luckson 2006b). She was also working as a staff nurse in the Gastro-enterology ward of City Hospital during that time and was always fascinated by the new technologies and treatment methods implemented for the care of Gastro-enterology patients. Hence she wanted to get into a research job. The challenge for her at that time was getting a full time contract

job in research, as having a short term contracted research job would have resulted in her   returning to her home country after the contract. However, due to her curiosity in research, the researcher took a 6 months contract research job at the Cardiovascular Trials Unit. This contract got extended on a 6 monthly basis for 3 years. Later on, she became the Clinical Trails Co-ordinator of the Unit. While working in the Cardiovascular Trials Unit, she was actively involved in British Hypertension Society (BHS) and Nurses Hypertension Association (NHA). She also was an office bearer of the NHA as the minute Secretary for two years and she chaired the scientific sessions at the BHS annual scientific conference, for the abstract presentation by Nurses in September 2008 and 2009 (Luckson 2008a, 2009a). The researcher also presented two papers at the BHS annual scientific conference in September 2006 (Luckson et al. 2006a, Collins et al. 2006). Moreover, the researcher's name was acknowledged in one of the Lancet papers in 2005 (Dahlof et al. 2005). The researcher's involvement with the BHS and NHA gave her more opportunities to keep her up-to-date with the current research in the cardiovascular area. This also gave her an opening to get involved in the Blood Pressure Association of the UK (BPA) and the researcher was invited as a speaker for their seminars (Luckson 2009c). This again, helped the researcher to go beyond her role to understand the world of clinical research, particularly in the cardiovascular field. With her experience in the cardiovascular research area, the researcher published three articles in the same field (Luckson 2008b, 2009b, 2010).

With the introduction of the DOH changes in research structures and managements, including NIHR and BRCs, City Hospital introduced a new role called Divisional Research Manager. This was a unique research role to City Hospital compared to the other NHS organisations. The main role of this job was to take lead responsibility for the research activity within the Clinical Divisions of City Hospital. The researcher managed to obtain this role after a

successful interview. In this job, the researcher was developing, promoting and managing the research portfolio of the Clinical Division, with a focus upon increasing the number of high quality grant applications through proactive support for researchers, including supporting the effective conduct of agreed projects and promoting high quality outputs of research. This role was also ensuring that their Divisional activities are aligned to the City Hospital's Strategic Research plan; the evolving regulatory requirements and to support their professional development. This also involved performance management and use of innovation to improve the delivery of services within the Division. She was also involved in the research and governance group for the City Hospital and in the CLAHRC steering group. Getting involved in the operational management of research within City hospital gave an insight for the researcher about the challenges in the current research environment.

The idea and motivation behind this study came from the realisation and understanding by the researcher as a Divisional Research Manager that the nurses and AHPs were not getting involved in research and there was less participation by these groups in research meetings and forums at City Hospital. It was also found that nurses who had completed their PhD were leaving the organisation due to a lack of satisfactory career progression. Another important fact noted was the number of nurses and AHPs attending the multi-professional research group meetings were consistently lower than other professional groups. As explained earlier, this was a group developed by City Hospital in order to support nurses, midwives and AHPs with their research ideas and to provide advice and guidance on how to turn their ideas from practice into a research project. Moreover, clinical nurses' involvement in research activities, presentations and research conferences were noted as being less represented. Instead, these research conferences were filled with medics. Research was rarely included in the agenda or in many

seminars, conferences and meetings conducted for and with nurses and AHPs. When a meeting had research in their agenda, then it was often at the bottom of the agenda and was removed when the meeting ran over time. Another issue noted was the lack of interest from ward nurses to support the patient recruitment into clinical trials. It was noted that ward nurses were sometimes reluctant to co-operate with the research nurses for recruitment or have research nurses involved as their own team.

The literature suggested that one of the characteristics of an enabling research culture is an organisation that values research (Borbasi et al 2005; Jackson 2005, 2008; Cummings et al. 2007; Cleary et al. 2011). According to Stetler (2003), as an organisation, there should be efforts made to improve quality research outcomes, involvement and participation in research activities and to translate the research knowledge into practice. City Hospital being a research focused organisation with BRC, it would be expected or assumed to have an environment that promoted a research culture. Assumptions are explained as the organisational members' beliefs about reality or human natures that are taken for granted (Scott- Findlay and Golden-Biddle 2005). Therefore, it was important to understand and measure this research culture rather than assuming its existence particularly among nurses and AHPs. When the literature (Chapter 3) around this area was examined, there was no empirical research conducted to measure the culture of these two groups together in a particular study and this is the reason why this study was undertaken. The next section of this chapter will state the aims and objectives of this study.

1.7   Aims and objectives of the study

1.7.1   Aim

The primary aim of the research study was to explore the influence of research focused exposure on the research culture of nurses and

AHPs in the UK and to identify if there was a difference in the research culture between a research focused and non-research focused clinical area.

1.7.2 Objectives

- To assess the research culture of nurses and AHPs at individual, team and organisation levels in a research focused and a non-research focused area using a validated research culture and capacity tool.

- To provide baseline understanding of research culture of nurses and AHPs in a research focused and a non-research focused hospital.

- To undertake focus group discussions with research active and research naive groups to provide contextualisation of the study results.

- To explore the views of senior managers about the research culture using semi-structured interviews

- To identify the barriers and motivators for research culture

1.8 Methods

In order to achieve the aims of this study, a mixed methods approach was used to explore the research culture of the staff. Quantitative methods were used to measure the research culture using a validated survey instrument and qualitative methods to explore the research culture using focus group discussions and semi- structured interviews.

1.9 Outline of chapters

The study has seven chapters and a brief outline of the chapters is given below.

Chapter 1: this current chapter has introduced the project, background and rationale.

Chapter 2: details the study context and justification for considering City Hospital as research focused and Riverside as non-research focused in this thesis for the purpose of exploring the research culture. It discusses the current surrogate measures of research output done at the research focused City Hospital and non-research focused Riverside Hospital.

Chapter 3: focuses on the literature that is relevant to this study. An extensive literature review was conducted in order to establish the current position of knowledge around the research culture in health care professionals.

Chapter 4: presents the methods used in this study. It begins by presenting the rationale for the chosen methodologies. This is followed by a discussion of the maintenance of rigor in this study. The methods of the study are then outlined and followed by a description of the survey procedures and focus groups and procedures for conducting data collection and analysis. The chapter concludes with an overview of the main ethical considerations identified in the thesis.

Chapter 5: begins by looking at the survey results. Descriptive statistics were used to analyse and present the results of the research culture of staff at City Hospital and Riverside Hospital at each level of the organisation. The results were presented to show the difference between City Hospital and Riverside Hospital and between Nurses and AHPs.

Chapter 6: includes the results of the qualitative data from the study, obtained through Framework analysis. Data from the focus group interviews of staff and individual semi-structured interviews with the managers are combined in parallel in this study to explore the

research culture. Themes developed are grouped as specific and generic themes which are explained in details in the chapter. Data triangulation was used to provide different views about the research culture and its contribution to the credibility or significance of the findings.

Chapter 7: concludes the thesis by discussing the importance and analysis of the findings of this study, including recommendations for future research study.

2 CHAPTER 2: STUDY CONTEXT

2.1 Introduction

This chapter began by explaining the context of the research focus in the organisation where this study took place and provided more in depth detail about both City Hospital and Riverside Hospital's research activities and focus. In order to understand the research focus, the traditional/established research output measures are also presented in this chapter. The first section of the chapter begins with City Hospital and because it was a Biomedical Research Centre, it also includes a brief description of BRCs.

2.2 Biomedical Research Centre development in UK

As per recommendations from the 'Best Research for Best Health strategy' (2006), the National Institute of Health Research (NIHR) has created BRCs within leading NHS and University partnerships. The purpose of BRCs is to drive progress on innovation and translational research in biomedicine including service, quality and safety. The NIHR Biomedical Research Centres were selected by open competition in which the organisations had to submit a Pre-Qualifying Questionnaire, which was then short listed by an expert peer-review panel with international membership. If successful, the organizations had to then submit a full application. Short listed NHS/University partnerships had to undergo site visits and/or interviewed by the expert panel (DOH 2006). City Hospital in this study was selected as a BRC through this selection process. There was a substantial amount of funding and infrastructure associated with this BRC status at City Hospital. This was similar for other BRCs also. Hence, the results of this study can be generalised to other BRCs and any other international centres with a similar research focus. NIHR (2015a) highlighted that BRCs created an environment

for scientific ventures, developed talents; and produced world class research outputs, thereby contributing to the knowledge, growth and economy of the country. In the next section, City Hospital's vision for research is described in detail.

2.3   The vision of City Hospital

As explained in the introductory chapter, City Hospital had been used in this research as an example of an organisation with the research focus in the UK. The vision of City Hospital was to become a world class campus for health, teaching, research and innovation, like other BRCs, which would have a strong emphasis on economic regeneration, science and enterprise. So, it was clear that research was embedded in City Hospital's vision. One of the aims was also to become a prestigious internationally renowned centre for research and innovation. As explained in section 2.2, the aims and visions of other biomedical research centres were also in the same line by driving research and innovation in the prevention, diagnosis and treatment of ill-health. These centres aimed at translating the research evidence for patient benefits and thereby contributing to making these centres internationally renowned (NIHR 2014). Moreover, City Hospital had research strategies, internal funding streams for research projects, research support groups and the lead nurse and lead AHP for research. Also, City Hospital had a Professor of Nursing to direct these nurses and AHP researcher's alongside a nursing and midwifery multi-professional research strategy and this is discussed in the next section. City Hospital was one of the first BRCs to have a professor of nursing and a multi-professional Research Strategy in the UK.

2.4   Multi-professional strategy

City Hospital in this study had a multi-professional research strategy. The aim of the strategy was to increase the research capacity and

capability and to promote evidence-based practice amongst nurses and AHPs. The focus of the strategy was also to facilitate the development of clinical academic nurses, midwives and AHPs (NMAHP) to undertake leadership roles in research activity. According to the strategy, the increased capability would ensure that nurses and AHPs would apply the research findings in their own everyday clinical practice. Locally, as part of the BRC, the NMAHP strategy was launched in 2009 in City Hospital and was followed through to meet its objectives. However, the focus and outcome of this NMAHP research strategy have not yet been analysed or evaluated. Hence this project tried to shed some light into the effect or impact of this NMAHP strategy by exploring the nurses and AHPs research culture at present in a research focused City Hospital compared to a non-research focused Riverside hospital which did not have any research vision or strategy. There was a survey conducted in 2008, before the strategy was implemented, by the Professor of Nursing of City Hospital to all of the Nursing and Midwifery staff at the Hospital and to the four largest Allied Health Professions (AHPs) – Physiotherapists, Dieticians, Occupational Therapists and Speech and Language Therapists. The survey sought to assess the value given to research and development (R&D) activity, the skills, potential and barriers to R&D at the Hospital and to evaluate the knowledge and experience of and views on, existing R&D support. The questionnaire used in this survey had not been tested for validity and reliability. There were 724 questionnaires received from the whole Hospital, representing a response rate of 24%. This included 549 responses from Nurses, 53 from Midwives and 119 from AHPs. This survey results indicated that the majority of staff who responded were interested in learning about research and in how to use research evidence in their practice. Another finding from this survey was that, there was still some need for research capacity building for nurses, midwives and AHPs of City Hospital. The recommendation from this survey in 2008 included giving more bursaries, fellowships and funding for postgraduate nurses and AHPs to develop their skills.

City Hospital had introduced some funding streams for nurse and AHP researchers since then, without necessarily focusing completely on postgraduate researchers. The NMAHP strategy in 2009, suggested that the above survey should be repeated in 2014, but it was never undertaken. The next part of this chapter will look at the detailed research outputs from both of these hospitals to understand the difference in research focus of both.

2.5   Research outputs of the organisation

In order to provide some background information on the research focus of City Hospital in this study; some baseline analysis work was undertaken for this thesis, on its research activity over a 7 year period defined as pre research focus (2005-2008) and post research focus (2009-2012) explained below. The research output data, which was collected through different sources, are given in Table 2:1.

Hospital data base
Search help from hospital data manager
Hospital finance team and work colleagues
Manual data search
Hospital annual reports.

Table 2:1 Data sources for research output

As discussed in the introduction chapter, research activity in UK hospitals were typically and traditionally measured in terms of the amount of research funding, research active staff, the number and quality of publications and fellowships. In this study, the output data collection for City Hospital was done for each indicator such as number of research active staff, total research grants income for the hospital, number of externally funded research fellowships, total number of publications in Institute for Scientific Information (ISI) top 25% journals and the clinical impacts. The data collected were then analysed and presented in this chapter. The following part of this

chapter will focus on how the analysis of these data was undertaken and how the results were obtained. However, these only reflected the quantitative outputs of research and did not evaluate the research culture.

2.5.1 Research funding

As Chapter 1 suggested, research funding was considered as a research output measure. Total research grant income for City Hospital was calculated for each financial year from the Research Division's database for the pre-BRC and post-BRC period (Figure 2.1). This figure shows that there was a drop in funding towards the post BRC period. However, this was due to the lack of accurate information available for the pre-BRC period. The 2008-09 funding of 27.9 million pound could be an over calculated figure due to the available information in the database for the pre-BRC period However, the researcher tried to find some possible reasons and justifications for this high research income for that period. One possibility was that, there could have been many older studies marked as still having an open or live status on the database where in reality they could have been closed ones, due to the lack of data updating. Moreover, in 2008, City Hospital underwent an external review of research output, which resulted in more data cleaning. This might have resulted in updating the status of the old studies and hence reflecting the real figures for the rest of the years in the graph Figure 2.1. Overall, the graph showed that the research income at City Hospital was significant and therefore it could be concluded that there was a noticeable research focus and activities at City Hospital.
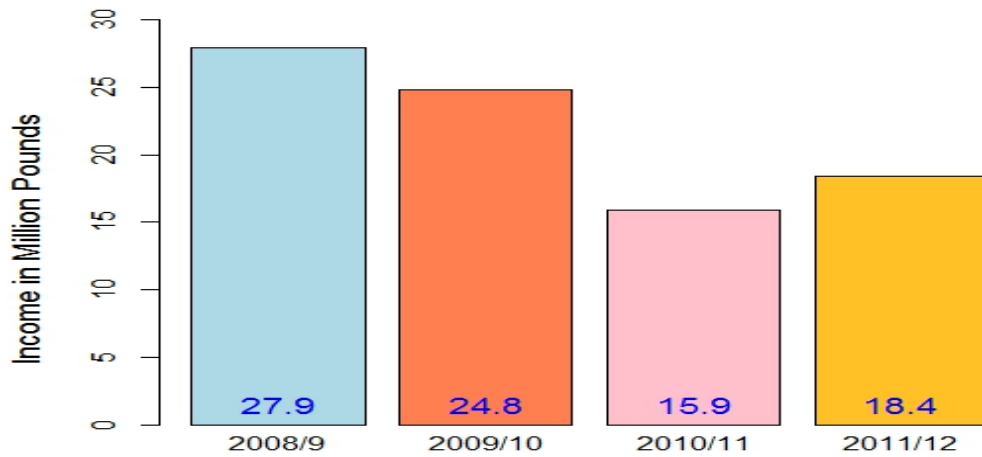
Figure 2:1Researh income-City Hospital

2.5.2 Research active staff

According to City Hospital's Research Governance policy, any research project involving its staff, facility or patients must be registered on the Trust Research database and will have to be approved by the organisation. Therefore, any staff with a live project registered in the Hospital's database were considered as 'research active' staff. A 'live' project is any project that is registered and ongoing, and been approved by the Research and Development office of the Hospital. The number of research active people were identified for each year between 2005-2012 (pre and post focus). Figure 2:2 illustrates the increase in staff numbers over this period of time. The graph clearly showed that there is an upward trend in the total number of research active staff which may indicate the research focus of City Hospital.
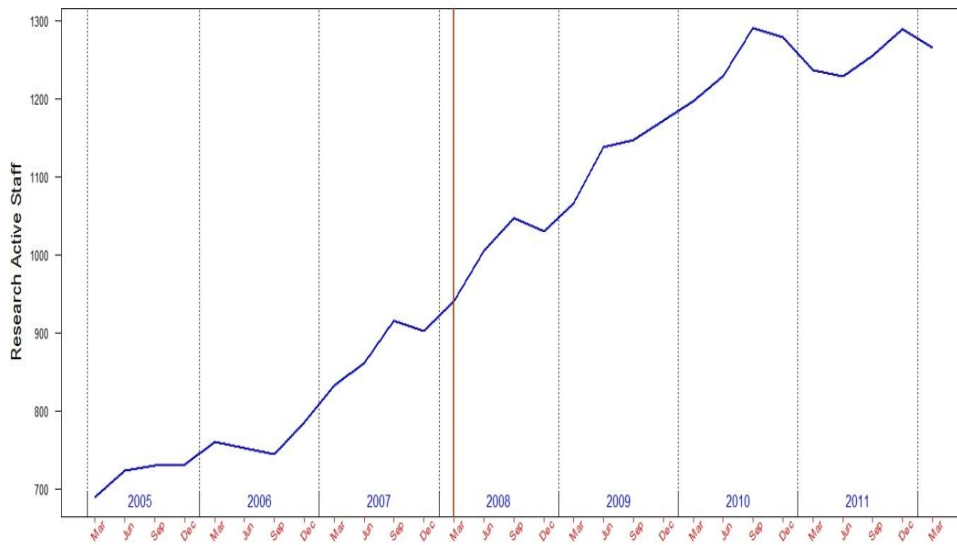
Figure2:2 Total number of research active staff from 2005 – 2011

2.5.3 Publications

The number and quality of publications City Hospital in this study were identified and categorised according to their impact factors and were grouped as high (top 25% of journal in research field), medium (middle 50% of journals in research field), and low (bottom 25% of journals in research field). The publications list was searched through Publisher Medline for all research active people for the above period. Then, the impact factor for each journal was identified using the web of science and their impact factor ranking /position in each research field were examined in order to group them as high, medium or low as explained above. The most widely and commonly used quality indicator for publication was the Journal Impact Factor. This was published yearly in the Journal Citation Report (JCR) and is produced by Thomson Reuters (New York, NY, USA). The impact factor (IF) was developed by Garfield in 1960s. IF was calculated by finding out the average number of journal articles in the previous two years and dividing it with the number of citations in the JCR year. For example, 2015-by the total number of articles published in the two

previous years-2014 and 2013 and dividing it by the number of citations in 2015. Garfield (2006) later identified that simply counting the number of articles in a particular year would result in missing out some small but important journals in their Science Citation Index. Hence, it was critiqued for its use (Petsko, 2008). Later, Hirsch (2007) proposed *h* index as an alternative to citation index (Braun et al.2006). Hirsch, (2005:16569) defines h index as:

> *"A scientist has index h if h of his or her Np papers have at least h citations each and the other (Np − h) papers have ≤ h citations each"*

So an h index of 8 indicates that the researcher had published 8 papers that each has at least 8 citations. However, by using this h index may result in misrepresentation of their research output for a highly productive author with low citation. Bornmann and Daniel (2007; 2009) pointed out that a journal's h index cannot be higher than the number of papers that are published in a certain period, therefore those journals with a few highly cited papers were not included in a ranking list that is based on the h index. Due to all these reasons, the JCI index and journal impact factors had been used in this project. Also even if there were some concern that journal impact factor might not reflect the importance of a journal, JCI index was important for measuring research output and hence, was used in this study too. It can be apparent that the quality of a journal might get changed even if the quantity had not changed, depending on the journal's impact factor. Figure 2.3 showed the total number of publications for the above period with an upward trend on it and Figure 2:4 showed the trend for the journals in the top, middle and bottom groups of impact factors. In Figure 2:4, it is noted that the top and middle group of publications have increased over the time, which showed that the quality also has increased over time. However the bottom group of publications remained with little variation indicating that there was no increase in the number of the publications in the

bottom impact group. Hence this upward trend in top and medium group indicated that there was more research focus in City Hospital which might have resulted in producing the high quality of publications.
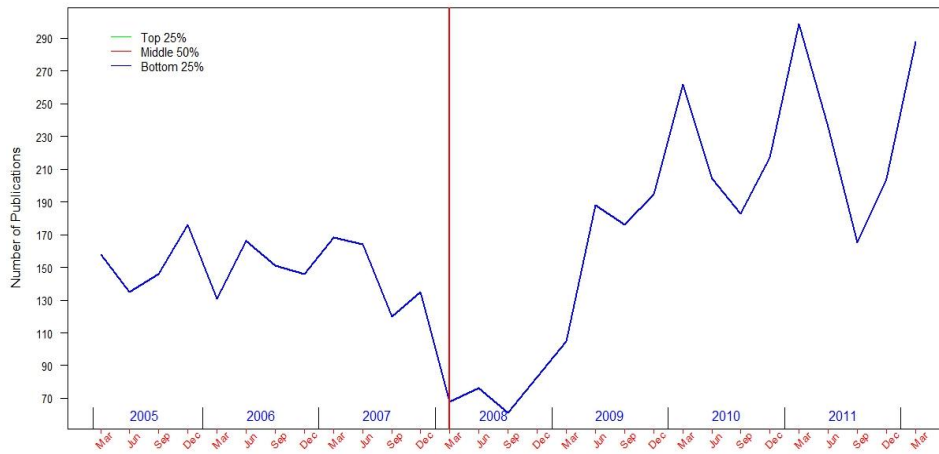
Figure 2:3 Total number of publications
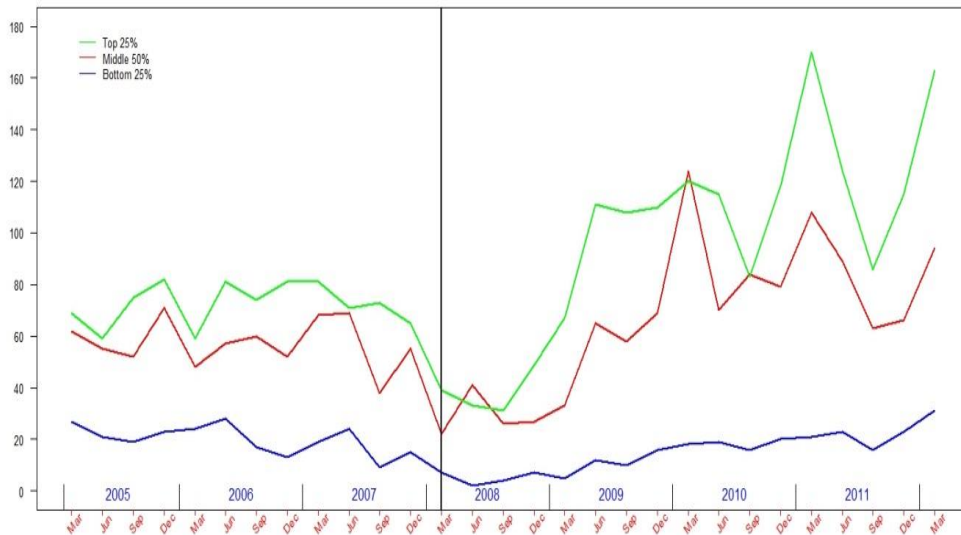
Figure 2:4 Numbers of publications according to the impact factors

2.5.4 Fellowships

Personal awards obtained by City Hospitals researchers were measured as the research fellowships (medics, nurses and AHPs). These have significantly increased over the period of time with more research focus and are clearly demonstrated in Figure 2:5
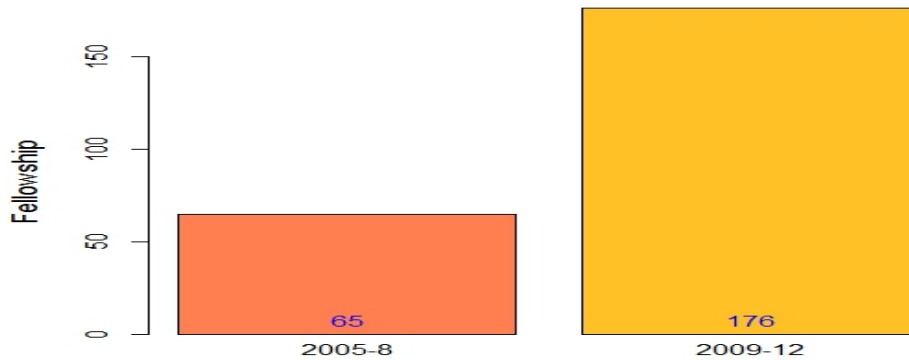
Figure 2:5 Total number of fellowships

For the period of 2003-2008, there were only 65 fellowships which had risen to 176 between 2009-2012 periods.

2.5.5 Clinical Impacts

Clinical and Innovation Impacts including intellectual property is also considered as an output measure and indicator for research activity. It is always easy to measure outputs such as publications, fellowships and grant income; and is easily accessed and quantified, whereas impact outcome measures are often difficult to assess. However, it is important to assess these impacts of research work as this would provide clear understanding of the investment return and have a major role in reducing the gap between efficacy and effectiveness of these investments (Weiss 2007). The number of clinical and innovation impacts including intellectual property were also assessed and calculated for the pre and during the research focus period in order to assess progress. The total number of clinical

innovation impacts obtained is illustrated in Figure 2:6. There were more (115) impacts reported for 2005-2008 compared to 73 to 2009-2012. The reason for this could be due to the data cleaning in 2008 as mentioned in the earlier section. Even though the numbers of impacts are low, it does still show the strength of research activity in City Hospital.
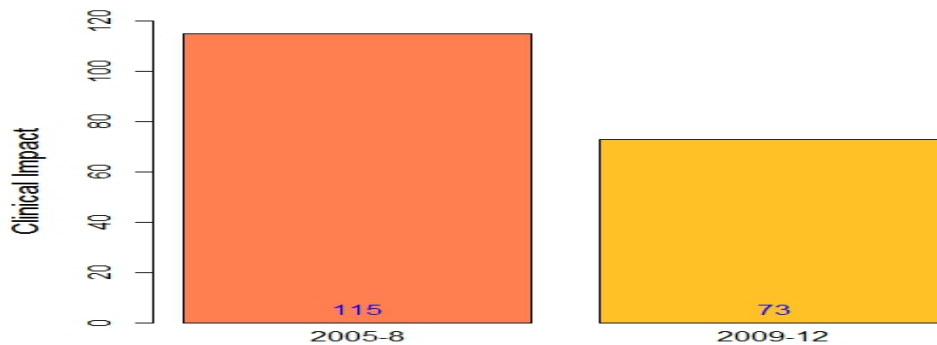
Figure 2:6 Clinical impacts

2.6   Summary of the research output at City hospital

In general, there has been an upward trend in the number of research active staff, publications, and fellowships during 2009-12 compared to 2005-2008 indicating that there was an increase in research activity. It can be debated that the upward trend could be a natural process as overall focus on research had risen in the upper echelons of the NHS. However, there was no strong evidence in the literature to suggest this natural change happened in any shape or form in other organisations.

The research output may be related to skills and experience in research and in ability and capacity to undertake research (Mant 1997, Cooke 2005).This in turn might be related to the research culture of the organisation which may need to be assessed and changed in order to assess and drive progress. Therefore, it is

important to explore the research culture, especially of nurses and AHPs as mentioned in the introductory chapter, in this research focused City Hospital. Moreover, City Hospital was an internationally research focused organisation and it would be interesting to understand the research culture of the staff there. On the other hand, Riverside Hospital had no specific research focus or given funding for research. It merged with City Hospital after all the research funding and strategies were implemented. So Riverside Hospital was used as a comparator to understand any research culture difference between a research focused and non-research focused areas in this study. The next section looked at the research productivity of Riverside Hospital in order to have an understanding of its research focus and activity.

2.7   Research activity of Riverside Hospital

Being a district general hospital, the research activity of Riverside Hospital was expected to be much lower than City Hospital. In order to highlight this lack of research focus, some output reviews were done by the researcher and are explained below. When looked at the available information, there was no data available on its research output for the period 2003 -2012. Also, it was unclear whether there was any research activity or if a research focus existed to obtain research output information or data. Hence, it was not possible to include the same amount of all the research output data for Riverside Hospital as given for City Hospital. However, attempts were made to obtain any available data through Riverside Hospital's annual reports and from the available Research and Development records. Due to an organisational change, none of the staff from the Research office remained in their positions and there was no realistic hand over of the research data from Riverside Hospital to City Hospital. However, after joining City hospital a research performance review for the year 2013 was performed in order to get some understanding of the research performance of Riverside Hospital and is given in Table 2:2.

	2012-2013	Performance
1a	Number of research active staff	24
2	Total research income	£94,072
3	Externally funded research fellowships	1
4	Number of publications	20
5	Clinical impacts	1

Table 2:2 Research output of Riverside Hospital

As per the available information in Table 2:2, Riverside Hospital had a minimal number of research active staff. The total research income and the fellowships were low, indicating that the research activity was limited. It was also hard to rule out examples of clinical impacts from Riverside Hospital. In quality measures, there were 20 research papers published by Riverside Hospital's researchers. Also, when reviewing the available information prior to 2013, it was noticed that Riverside Hospital had no research vision or strategies.

2.8   Conclusion

This chapter had reviewed the research outcomes of a research focused hospital with a non-research focused one using the traditional research output measures such as funding, publications, grants, research active staff, fellowships and clinical impacts. The information and the data provided in this chapter indicated that City Hospital had a strong research focus whereas Riverside hospital did not have an appreciable research focus or activity. This chapter had a meaningful look at the minimal research output from the information available, between a non-researches focused area and a research focused area. Subsequently there was some justification to use City Hospital as Research focused one and Riverside Hospital as the non-research focused one for this study. Moreover, it may be expected that there would be some differences in the research

culture of nurses and AHPs between these two hospitals due to their difference research focus; and this was examined in this study. The next chapter will expound on the literature review undertaken for this study.

3   CHAPTER 3: LITERATURE REVIEW

3.1   Introduction

This third chapter focuses on the literature describing what is known to date and putting the research question in context. There are predominantly two options when conducting a literature review: a systematic review or an extensive review. A systematic review can be seen as a research method for extracting the data related to a particular topic. This would be considered as a research project with its own research question developed from problems and examined using existing studies (Burns and Grove 2008, Denyer and Trantfield 2009). An extensive review is defined by Dunleavy (1988: 112) as: "a systemic reading of existing academic writing on a particular topic." This extensive review was done in order to understand the current knowledge around the research culture amongst nurses and allied health care professionals. An extensive literature review helps to establish the existing, important and current knowledge on a particular area or topic (Dunleavy 1988, Cooper 1998; Burns and Grove 2008). The focus is on identifying the gaps in knowledge and how to address these. This is highlighted by Dunleavy (1988) who states that one should not focus single minded on what the authors are trying to say in the paper but rather on what they are trying to get out of that paper. Therefore an extensive literature review was performed in this study as opposed to a systematic review as the aim of the review in this study was to get all the available literature around research culture. The source of the data in this thesis included those studies identified from a systematic search of computerised databases (Medline, psych INFO, CINAHL of 1987), hand-searching university libraries and journals for the period from 1990, studying bibliographies and reference lists and internet searching using search engines such as Yahoo and Google scholar. The search terms used were 'research', 'research culture', 'nurses', 'AHPs', 'research culture tools' and 'Allied Health Professionals'.

The literature review has been divided into the following sections in order to clarify the different aspects of the research culture between nurses and AHPs:

- Research Capacity Building

- Tools to measure research culture

- Barriers and enablers of research culture

- Research environment

- Collaboration

Research Capacity Building will be discussed in the next section.

3.2   Research Capacity Building

As explained in the first chapter, research culture and Research Capacity Building (RCB) are interrelated. In healthcare, RCB relates to building elements that contribute to the sustainability and continuity of research, overcoming barriers and enhancing research culture in an organisation; and functions across all levels such as the individual, team and organisation (Cooke 2005).

The drive towards high quality care based on evidence-based medicine has meant an increasing pressure on healthcare organisations to become more research focused. The aims of research focus are to advance the research skills, encourage research and increase research productivity through adequate training, financial support, processes and infrastructure, collaboration and career pathways (Trostle 1992; Bates et al. 2006; Cooke et al.2008). The literature had furnished and confirmed that it is important to promote research skills in practitioners (DOH 1993b, 1999, 2000). Research culture will be considered as a measure of this research output and productivity. This chapter focused exclusively on the available literature on research culture especially that of nurses and AHPs. Studies that concentrated on the research

culture of the medical profession were excluded as this thesis focused on non-medical professions such as nurses and AHPs. The available literature in this field had mainly concentrated on the challenges of developing research capacity rather than research culture, and had explored some evaluations for RCB (Happell 2008; Jenerette et al. 2008; Conrad 2008; and Moore et al. 2012). Also, these studies on Research Capacity Building were done at various places internationally and between different clinical settings and different health professions (Moore 1997, Segrott et al. 2006). There are other studies which have looked at the research barriers in academic settings (Orme and Powel 2008, Shera 2008), in different individual professional groups (Moore 1997, Waine et al.1997, Rosser et al.2010, Daniels 2002) or in a specific area of health (Hassanein 1988, Cooke 2002, Frontera 2005). However, there were no studies on research culture, or capacity building combining and comparing multidisciplinary groups of nurses and allied health professionals together and on comparing between two health care settings as this research study had done. In this review, the researcher has chosen only the relevant papers on research culture and Research Capacity Building as all of the RCB literature did not significantly contribute to the research culture domain. A validated way to measure research culture is described in the next section.

3.3 Tools to measure research culture

Traditionally and historically, levels of research capacity have been measured using the number of publications and its citations, presentations of research results, number of PhD students, fellowships, external links and collaborations and grant funding (Patel et al. 2011). Since 2000, few tools have been developed to measure research culture, that is, individual level skills to carry out research. These tools included measuring skills in finding out relevant literature, obtaining research infrastructure and support, and accessing it, writing research protocols, applying for funding,

collecting data, analysing results and writing research manuscripts (Smith et al.2002, Watson et al. 2005, Whitford et al.2005 Sarre and Cooke 2009, Holden et al.2012a). The following sections look at some of the relevant tools.

Farmer and Weston (2002) developed a conceptual model for RCB activity in an Australian Primary Health Care, which promoted a whole system approach, encouraging networking and collaboration. This framework was developed to support the promotion of research and evaluate capacity. This model was aimed on individual General Practitioners (GPs) and primary care practitioners to engage or participate in research. In this model, attempts were made to reduce barriers by creating more collaborative and networking opportunities and mentorship. This model was focused on an organisational infrastructure with a whole system approach depending on GP's local interest and needs and their own current levels of capacity.

Smith et al (2002) created the 'research spider' with an aim to measure individual level research capacity and Ried et al. (2006) have used this to evaluate RCB activities .Research spider (Figure 3:1) has a ten score areas for self-evaluation of knowledge and skills. These included 'writing a research protocol', using quantitative research methods', 'publishing research', 'finding relevant literature', and 'applying for research funding'. For each of these areas, the level of experience was measured on a five-point scale ranging from one as the no experience to 5 being the high experience. These scores were more defined and used in the Research Capacity Matrix developed by Whyatt et al. (2006).
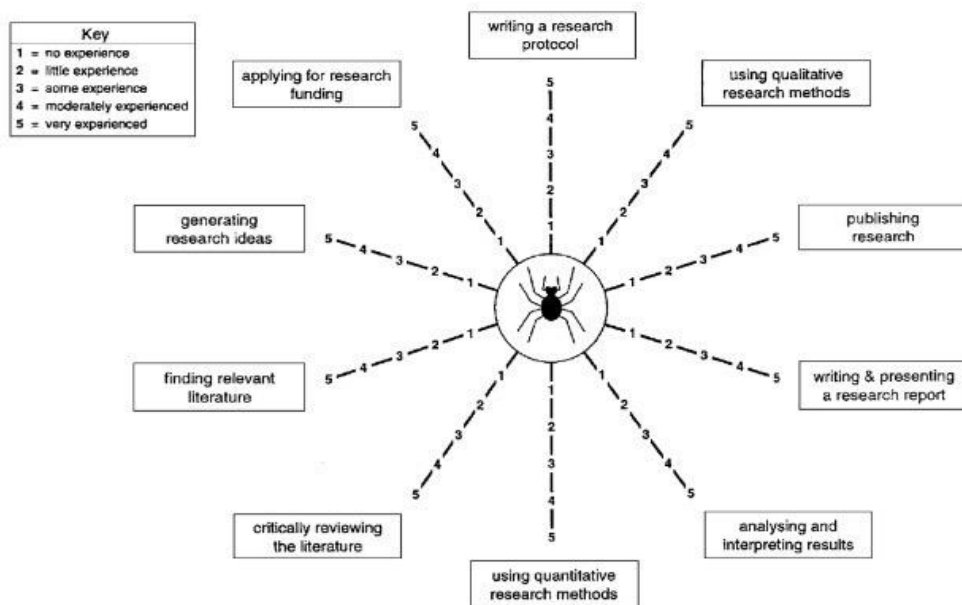
Figure 3:1 Research Spider (Smith et al. 2002)

Another tool looked at in this section is the R&D Culture Index (Watson et al. 2005). This was an important tool developed to measure the organisational approach and was more focused on the department that managed research and development in an organisation rather than the organisational research culture per se. Also more attention was paid on the organisational needs and strategies that affected the practitioners' involvement in research. It aimed at evaluating the organisational R&D culture by measuring three elements such as the individual or practitioners' skill base, organisational infrastructure, and working environment. This tool mainly covered the individual and organisational levels.

In the literature other frameworks looked at different aspects of research culture, capacity and research utilisation. Estebrooks (1999) conceptual framework looked at the theoretical understanding of research utilization. The Promoting Action on Research Implementation in Health Services (PARIHS) framework (Kitson et al. 1998) was developed to look at the Implementation of Evidence-based practice in the UK. However, the context assessment index by McCormack et al. (2009) was developed because there was no good

way to assess 'context' if using the PARIHS framework. In 2005, Cooke's framework (Fig 3:2) was developed to measure the impact of RCB at four levels, based on 6 principles of RCB and they were:-

- develop skills and confidence,
- support linkages and partnerships,
- ensure the research is 'close to practice',
- develop appropriate dissemination,
- invest in infrastructure,
- build elements of sustainability and continuity.

This framework included four structural levels such as individual, team, and organisation and supra-organisation, on which each of these principles can be applied (Figure 3:2). This was later used in a team based approach to evaluate the RCB activities using qualitative methods; as there were no quantitative scale in existence based on this framework (Cooke et al. 2008).
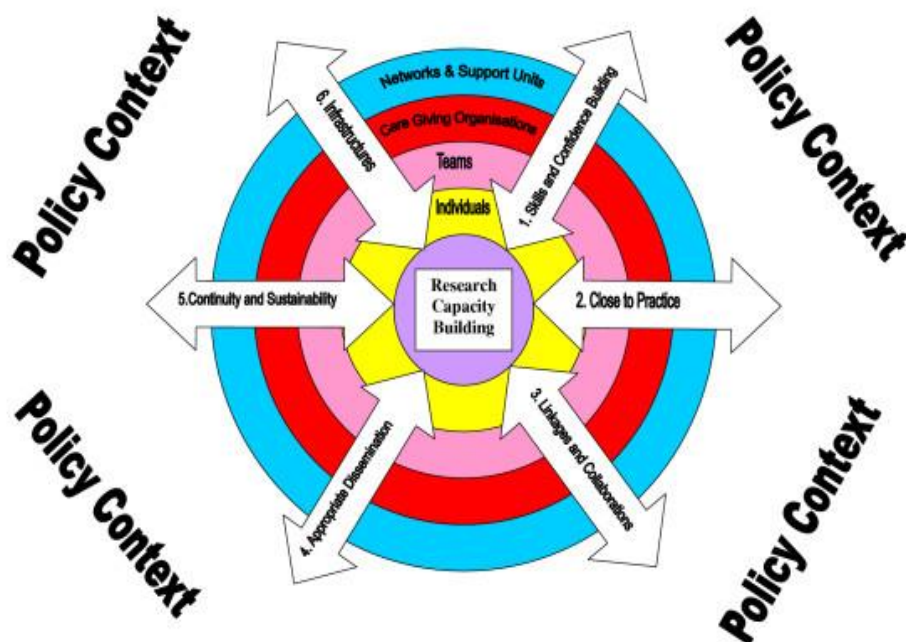
Figure 3:2 Research Capacity Building: A Framework for Evaluation (Cooke 2005)

Since then, Sarre and Cooke (2009) have developed indicators for these six principles. But still there was no validated tool to measure the research capacity or culture at all four levels such as individual, team, organisation and supra-organisation. In 2012, the Australian research capacity and culture (RCC) tool (Holden et al.2012a) was developed to quantitatively measure the research culture based on Cooke's framework. RCC contained a number of statements relevant to three levels (individual, team and organisation) and items are scored separately for each level or domain. Though supra-organisation level was not included in the tool, there were items in the tool relating to the supra-organisational domain. The respondent's rate these items on a scale of 1–10, with one considered as the lowest skill or success level and 10 was the highest possible skill or success level. This RCC tool was used in this study and hence the details about the tool are explained in Chapter 4. Because RCC was based on Cooke's Framework (Cooke 2005), its 6 principles of RCB, as explained earlier, are used for discussion of results in Chapter 7 of this study.

In conclusion, though all but one of the above were applied as theoretical and conceptual frameworks, apart from the RCC tool, no other tool in the literature was used quantitatively to measure the effectiveness of Research Capacity Building and research culture interventions. It aimed at three levels of individual, team and organisation. In other words, according to the literature, RCC was the only validated tool available to measure the whole system approach to RCB activities. Hence the RCC tool was selected as the best one to use to achieve the aims of this study. This Australian Tool has not been used in any other healthcare systems, including the UK. This thesis is the first one in the UK and outside Australia that used the tool and would therefore build upon the knowledge and evidence from the Australian RCC Tool. Though this thesis was not aimed at measuring any RCB activities in particular, the research focus of City Hospital could be considered as an aid for organisational Research

Capacity Building. Hence the tool was used to measure the research culture of a research focused and non-research focused organisation in this thesis.

3.4   Measuring research culture

As previously discussed in this chapter, the RCC Tool has been developed as a method for measuring and benchmarking research capacity and culture. However, when looking specifically at the literature around studies using the RCC tool, there were only a small number of them and these were done in Australia only. Moreover, the majority of the studies were undertaken with only AHPs. So this research study would appear to be the first one to measure the research culture of nurses using this tool and to compare between the two groups (nurses and AHPs).

A study using the RCC tool was done by Holden et al. (2012b) to evaluate a team based approach to RCB in Primary Healthcare setting. The study used a multi strategy RCB intervention (Cooke and Green 2000, North American Primary Care Research Group 2002, Ried et al. 2005, 2006, 2007, Ramakalawan and Dieppe 2008, McIntyre et al. 2011). These interventions included:

- special research skill training programs for individual projects depending on the phases

- writing bursaries to support research funding grant applications

- some financial assistance with direct research costs for failed grant applications

- research Fellowships (quarantined time) for one day per week for one person from each team

- providing infrastructure support such as research software, desk and computer use.

The study included 69 participants including nurses and AHPs and 2 paediatric doctors as intervention and control group in a primary care of Australia. The study results showed that there was an increase in research skills; however, the difference was not statistically significant. This study was done in a single primary care organisation and therefore, the results may not be generalisable to tertiary care or large organisations. It was interesting to note from this study that the participants recommended a longer intervention period for the team. The participants felt that they did not have the capacity or time to carry out additional activities along with their own work. This study results indicated that team based approach could be effective for Research Capacity Building.

Howard et al. (2013) conducted a study amongst the Australian Dietetic teams to look at the factors affecting the research capacity. This study also used the RCC tool, not only to evaluate the capacity and culture, but also to identify the factors associated with research capacity and culture. The study identified that the dieticians involved in the study had a moderate level of research skills mean (SD) M5.1 (1.7) and moderate level of support from their departments [mean (SD) M6.1 (2.5). Research involvement was decided by the proportion of role (FTE) designated to research (b = 0.34, t = 4.16, P < 0.001) and number of years of experience in dietetics (b = 0.32, t = 2.67, P < 0.009). This was one of the first studies in the literature to look at research capacity among Australian dieticians. The study results concluded that research capacity of dieticians is related to their number of years of experience and their job descriptions with research component in it. Also, the dieticians in this study had a low individual research skill level compared to other health care professionals.

Another study by Lazzarini et al. (2013) used the RCC tool to measure indicators of research skills in Queensland Podiatrists. This

was the first study that reported the use of the RCC as an electronic survey since it was validated. This was an observational study looking at the levels of research capacity of podiatrists in the public sector during 2011 and 2012 in two different states. There were 34 (2011) and 32 (2012) respondents in the survey. This study was reporting the research capacity levels of the higher number of podiatrists. According to the 2011 survey, podiatrists had low research capacity skill levels compared to similar studies for AHPs. Also the study had adequate survey samples as per the statistical testing (n > 30 sic). However, these numbers were still very low compared to other studies of AHPs. In the 2012 survey podiatrists reported higher skills and their support to initiate research compared to the 2011 survey. The study concluded that the noticed improvement was in line with the efforts made for Research Capacity Building (RCB) and its strategies; and this could be an indication that the RCB activities may make improvements in research capacity and culture of podiatrists. The findings of this study suggested that podiatry practitioners were able to search and review relevant literature, however, their skills in performing other research activities listed in the individual level of the RCC tool were low. Some of the examples were securing research funding, providing advice to less experienced researchers, designing questionnaires, submitting an ethics application etc. and their median score was less than or equal to M4.

Another study, focusing on measuring the research culture and capacity of the podiatry profession within Australia, was conducted by Williams and Lazzarini (2015). They investigated whether there were any differences between podiatrists working in different health sectors and workplaces, using the RCC tool. This study used a web based survey and found out that there was a low success or skills (Mean rating < 4) on the majority of individual success or skill items on the RCC. There was higher individual success or skills in most of the items for podiatrists working in multi-practitioner workplaces

compared with sole practitioners ($p < 0.05$). However the numbers of respondents in this survey were low compared to the total podiatrist population in Australia, giving a response rate or 6%. There were a total of 232 fully completed surveys out of 4017 registered podiatrists. However, this study suggested that the workplace and health sector setting played a key role in the research skills of individual podiatrists. Podiatrists in multi-practitioner workplaces reported that their organisation encouraged undertaking research activities. They also reported low levels of resource support provided by their organisations for research plans, funding and equipment to actually do this. Study findings suggested that those working in multi-practitioner workplaces and those in the public sector or non-clinical roles reported consistently higher individual research skill levels than their counterparts working in sole practices or private sectors respectively.

There was one more study, using the RCC tool, conducted by Pager et al. (2012). The main aim of that study was to understand and identify how motivators and barriers had impact on research for AHPs in health care settings. The study is debated in the next section detailing enablers and barriers.

3.5 Enablers and barriers of research culture

This section is looking at both enablers and barriers of research culture. The literature on enablers is reported first in this section.

3.5.1 Enablers for an effective research culture:

When looking at the literature, few papers looked at how good or effective research culture was. However, the enablers of research culture were discussed in the literature and are explained here. According to Wilkes and Jackson (2013:29) in an organisation with

'Enabling research culture', there will be an environment to enable and support creative work, generate new knowledge and there will be an opportunity for researchers to interact and grow. In the literature review the main characteristics of an enabling research culture highlighted in the literature were: leadership, collaboration, organisational support, strategies and framework, positive team relationships and opportunities and training (Borbasi et al 2005, Jackson 2005, 2008, Cummings et al 2007, Cleary et al 2011).

Wilkes and Jackson (2013) conducted a descriptive survey to identify characteristics of enabling and disabling research cultures. The survey questions were about research culture of nurse academics. The questions posed where as follows:

- What does the term 'research culture' mean to you?
- Name three characteristics of a 'good' research culture,
- Describe a situation in which you were involved,
- Where there was a 'good' research culture for staff and/or research students,
- Describe a situation in which you were involved where there was a 'bad' research culture for staff and/or research students.

The study results indicated the importance of environments, characterised by research productivity, positive collegial relationship, inclusivity, non-competitiveness, effective research processes and training. The Respondents viewed these factors as being characteristic of and crucial to the creation of and enabling research cultures. However, the study only had seventy two questionnaires returned from 730 questionnaires sent, representing a response rate of 12 per cent. This too was an Australian study, and only included a small number of nurse academics especially higher degree research student supervisors. Hence, their small sample size may affect generalisability of the study to another setting. Nevertheless the

study provided some strong evidence in highlighting the importance of community and collegial relationships to research productivity. When looking at the literature focusing on AHPs, the identified motivators for research by them were the ability to develop skills, increase job satisfaction, career advancement and identifying problems that need changing, and engaging with universities and research mentors (Stephens et al 2009, Cook et al. 2008, and Pager et al. 2012).

In another Australian study, Finch et al (2013) conducted an online survey of Speech and Language Pathologists (SLPs) to identify the factors that influence research engagement. They contacted 330 SLPs to complete the survey, of these 158 responded, but only 137 completed the survey. The survey tool consisted of questions (30) on existing levels of research interest, confidence and experience in performing specific research tasks effectively in the last 5 years. Though this study was not directly related to the research culture domain, the study results do suggest that SLPs had confidence and experience in performing basic research task like finding or searching literature. However, they had minimal confidence and experience with complex research tasks such as analysing and interpreting results, publishing results. Also, their study concluded that SLPs had more levels of interest in research than having confidence or experience. Furthermore, many SLPs reported low experience in most research activities. As this study was conducted in a single state of Australia (Queensland), there should be caution in generalising the results internationally.

There were numerous factors identified in the literature to facilitate high quality research and increased level of research output. However, a research culture was the main "*key*" to the development of research capability (Pratt et al. 1999). Literature suggested that internationally, research focused centres or facilities were seen as the enablers of RCB by providing opportunities for training and

development. For example, Nursing Clinical Development Units (NCDU), which originated in the UK, had helped to promote evidence-based practice and collaboration between academic and clinical organisations (Happell 2008). Similarly in the United States of America (USA), there were nursing partnership centres aimed at improving research skills and the research environment (Jenerette et al. 2008). There were Regional Training Centres to develop nursing research capacity and research opportunities (Conrad 2008). In the UK, other BRCs and university hospitals have developed a centre for nurse and midwife led research to enable nurses and midwives to develop world class quality research. Also, the National Nursing Research Unit at Kings College UK was also developed with an aim to improve nursing research. However, City Hospital did not have any of these centres developed solely for nurses and AHPs and hence was not able to establish its effectiveness on the research culture.

Organisation was considered to have an important role developing research culture. When Snelgrove and James (2011) looked at the perception of graduate nurses on research and development culture in one of the healthcare Trusts in the UK, it was found that participants who wish to conduct research were still hindered by organisational barriers and culture. Their study had two phases, phase 1 involving the questionnaire survey using research culture Index and phase two with focus groups, looking at nurses' experience and barriers to research. Compared to this thesis, their study only used graduate nurses and non-graduate nurses and AHPs were excluded from the study. Lack of organisational research culture and education were seen as a main barrier and facilitation in this study. It was interesting to note from their study that though graduate nurses had theoretical knowledge for research, these were not instrumental for them to carry out or conduct research. Also, as the nurses were not using their research skills and knowledge, it resulted in deskilling themselves and losing their confidence from research.

When looking at the literature on AHPs, Ilott and Bury (2002) undertook a quantitative analysis of research activity in occupational therapy, physiotherapy and speech and language therapy using the 1997 and 1999 versions of the Register of Therapy Researchers. This provided an insight into one element of research capacity and allowed career trajectories to be monitored to inform strategic planning. There were 339 entries on version 1 (1997) of the register, which increased to 624 in version 2 (1999). There was an upward drift in qualifications with nearly twice as many therapists with research degrees in 1999. A total of 97 therapists had been lead grant holders for national or international research programmes/projects. Based on a self-definition, 96 therapists (15.4%) identified themselves as R&D leaders. Seventy-six had experience as members of research ethics committees and 51 had experience of national R&D committees. Where AHPs are lead researchers this was most likely to indicate that the primary research questions being investigated are central to AHP service delivery or care. While their study provided insight into the capacity in therapy professions it did not provide any understanding on available infrastructure to support research. This study revealed the need for national investment in research training, particularly from post-doctoral researchers.

Looking at an organisational research culture, Schein (1993) suggested that examination of the socialisation of new members and their relationship to research is an important element to analyse. This means that the orientation of new staff to research is a vital component to be considered in a thriving organisational research culture. Another important enabler identified in the literature was the use of training schemes (Short et al. 2010). Fellowship programmes were also identified as another factor for building research capability and culture in staff by Selig et al. (2009) in USA. Selig (2009) confirmed that the evidence-based practice fellowship programme

helped in changing the nursing culture of an institution to an evidence-based practice culture. This finding also concurred with (Ried et al. 2007) earlier study where the provision of research bursaries, grant funding and fellowships improved the research capacity and skills of nurses in Australia.

Similarly, in another small Australian study by Spence (2014) 5 clinical Neonatal Nurses with a Research Fellowship had an opportunity to experience research first hand under the supervision of the Clinical Nurse Consultant together with the support of a Professor of Paediatric Nursing and a neonatologist .The fellowship awards had fostered a nursing research culture and subsequent research studies within the Neonatal Intensive Care Unit (NICU). The fellowships helped in developing research studies in neonatal units on feeding trends following neonatal cardiac surgery, parental support; sleep in the NICU, RCT of securing ETTs (Endo Tracheal Tubes) and a weaning protocol for ventilated neonates. The study results suggested that all the fellows had influenced the NICU practice with presentations at research meetings. Also, 3 fellows received new investigator awards for their studies. The study results suggested that the nursing research fellowship's has influenced the nurse's practice and nurses became more active in research. However, this was a single centred, small observational study and hence caution should be taken when generalising the results.

Another initiative to promote research culture or an enabler for research culture was the shared governance approach (McCormack 2003). Robinson (1999) stated that shared governance aided in introducing key initiatives in one hospital that has since led to the development of over 20 research projects. According to O'Grady et al. (1997), shared governance is a professional practice model based on the principles of partnership, equity, accountability, and ownership at the unit level where the point of service occurs. However, this was an organisational responsibility to ensure and adopt a formal shared

governance structure that empowers nurses and AHPs to do more research.

The research literature suggested that an organisation has an important role at different levels in developing an environment and culture that supports research. There was a review study by Cooke and Green (2000) on the factors affecting Research Capacity Building. The review identified that there are many of these factors and are affected at different levels such as the individual and organizational. The study pointed out the need to develop strategies to create and promote a research culture, identify and prioritize existing areas of research interest, and obtaining relevant funding and publishing and disseminating the results of the research and obtaining academic qualifications. However, the review did not provide clear information on what was actually clearly needed to increase research capacity and culture in clinical care.

According to McNicholl et al. (2008) a paradigm shift in organisational culture is important in order to promote Research. Ilott and Bury (2002) also state that an organisational culture shift is required to overcome the challenges of increasing research utilisation. It also required good collaborative effort, participation and input from all sectors within the organisation. Bland and Ruffin (1992) pointed out that research culture is affected by personal as well as organizational characteristics. They highlighted that when a scientist has been transferred to a less research active organisation, then his or her research output also became reduced. Bland and Ruffin (1992:385) identified 12 characteristics affecting research productivity were as:

"1) *Clear goals that serve a coordinating function;*
2) Research emphasis;
3) Distinctive Culture
4) Positive group climate;

5) Assertive participative governance

6) Decentralized organization;

7) Frequent Communication;

8) Accessible Resources; particularly human

9) Sufficient Size, age, and diversity of the research group

10) Appropriate Rewards;

11) Concentration on recruitment and selection Recruitment and selection;

12) Leadership with research expertise and skill in both initiating appropriate organisational structure and using participatory management practices"

It seems to show then from the above list that there is need also for a change in the organization in order to change the attitudes and skills of people to research (Pratt et al.1999). However, Schein (2004) highlighted that the actual values of an organization may not be related to the corporate values and morals important to an organization and this dissonance can lead to a major change in research productivity, measured by publications and its greater external focus. Hence, an organisation is considered to be in a better position to impact on the research capacity and culture by creating links between and across the different levels such as individual, and team. Also, a whole organisational support and approach is needed to improve research culture. The previously mentioned study by Williams and Lazzarini (2015) also suggested that the organisation has a role in research culture and suggested that those working in multi-practitioner workplaces reported higher individual success or skills in the majority of items compared with sole practitioners (p < 0.05).

There are not many literatures on the influence of research infrastructure on research culture. Some of the grey literature states that these are the structures and processes needed for doing any research. Some of the research literature as discussed below

covered different aspects of the organisational infrastructure. Some literature suggested having leaders and professors in particular fields of an organisation would promote research and research based culture (Butterworth 2010). Another action research done by Joffres et al. (2004) suggested that effective leadership along with congruence of organisational objectives enhanced Research Capacity Building (RCB) in healthcare. This was supported by Begley et al. (2014) by highlighting that strong research leadership would help in enhancing research capacity and culture in academic institutions .This would lead to better patient care and improve education of nursing and midwifery students. The role of the educator was also identified in the literature as influential in shaping the academic careers of nurses and AHPs (Girot 2013). Some of the RCB literature indicated that having a research director increases research activity and productivity. In an observational study, conducted by Blaber et al. (2013), bedside nurses were designated as research champions. Their role was to enhance participant safety and data quality, and to be a mechanism for disseminating research concepts to nurses through training, hands-on experience, and mentoring opportunities. The goal of the study was to foster a multidisciplinary research culture where nurses contribute to study design prior to ethics submission. The research champions assisted in developing unit-based documentation tools, authored resource materials, inducted staff in services, and mentored nurses caring for the patients. The result of this study showed that the research studies with a champion had improved outcomes. Moreover, Segrott et al. (2006) also suggested a research manager provides strategic direction support for projects and financial commitments, develops research leaders, provides specific elements to an effective infrastructure to Research Capacity Building, and include research activity in job descriptions. Sarre and Cooke (2009) argued that in an organizational research culture, there should be senior managers who are 'research champions' to plan, commission and use research. Probst et al. (2014) conducted a

survey to audit research capacity across radiographers in the UK. This study also suggested that a research coordinator with a responsibility to motivate others would help in improving the research culture and capacity for therapeutic radiography led research.

In addition, McCance et al. (2007) stated it is important to have a strong leadership and expertise to encourage different professionals to do research and to increase the research capacity of individuals. Hence the literature indicates that the strong leadership and management are needed in an organisation to improve its research culture.

There was some evidence in the literature to suggest that there needs to be a close link between three levels such as individual, team and organisation to promote research culture. In other words, a whole organisation approach is needed to achieve and promote research culture. This is supported by a recent Australian study by Golenko et al. (2012) in which semi-structured in-depth interview were done with nine AHP senior managers. The study concluded that research should be one of the important values of the organisation and managers should provide support through processes, structures and systems to advance research culture. Tanner and Hale (2002) also confirmed that support and facilitation of managers are very important to encourage research culture.

Furthermore, there were suggestions in the literature that focus of research culture and capacity should be at team level support and is important for research capacity development (Smith 1997). Jowett et al. (2000) found that GPs were seen as more research active if they were part of a research active team. However, Cooke's (2005) framework suggested that research capacity levels should be focused on four levels as mentioned in section 3.3. This means enabling research capacity and culture at individual, team, organisation and supra-organisational levels including universities,

R&D Support Units, and networks. Cooke (2005) argued that each level is important and may be dependent on one another. According to Cooke (2005), efforts should be made at individual level on developing one's own skills in research. However at team level, the focus should be on team based approach on sharing the learned skills and knowledge. At the organisational level, efforts should be made to avoid the identified barriers, promote enablers and to build elements of research sustainability and continuity. Creating and maintaining partnerships and collaborations with external links such as universities, networks and support units, accessing funds and disseminating the results should be the focus at the supra-organisational levels. Cooke's Framework had been used as a foundation of enquiry for this work and is used in the discussions in Chapter 7 of this thesis.

3.5.2 Barriers to an effective research culture

There were many barriers for effective research culture identified in the literature. These were lack of time, other work priorities, lack of research skills and knowledge to do research at individual level, lack of support and infrastructure and lack of support from the managers. (Albert and Mickan 2003; Byham-Gray et al. 2006; Pager et al 2012). Clifford and Murray (2001) and Happell (2008) highlighted the lack of knowledge as the major barrier for research. However, Loke et al. (2014) argued that there are other factors associated with lack of knowledge. Loke et al. (2014) conducted a study using mixed-methods exploratory descriptive design, to explore clinical nurse's views on their capacity and organisational support in doing research. The study used a questionnaire developed from the literature review and had questions around nurses skills, knowledge and perception about research and organisation support available. The questionnaire was sent to 211 nurses in educational and clinical settings who attended research seminars in Singapore. Out of those 211 nurses, 188 responded giving a response rate of 89.1%. The

nurses, in this study, showed much interest in research, education and research activities. However, one of the challenges raised by this study was breaking the organisational constraints and barriers as these were considered as a major contributor for lack of research. Hence the study concluded that the lack of nurses conducting research cannot be attributed to the lack of fundamental research knowledge and skills alone. The other reasons could be nurses' complex working environments and their own job responsibilities.

In a literature review by Segrott et al. (2006) on development of nursing research capacity in academic departments, it explored the major barriers to develop a research capacity and the strategies adapted to capacity building. They identified some of the main challenges affecting research capacity development such as:-

- material constraints
- lack of funding
- a shortage of appropriately skilled personnel
- the absence of a research infrastructure
- organisational contexts
- the changing roles and expectations of nurse educators

Other barriers identified by nurses and AHPs were lack of access to senior research managers and professionals, lack of staffing ,funding and support from managers which were out of their control (Clifford and Murray 2001, Ried et al 2007, Daniels 2002, Cook et al.2002). Lack of knowledge and skills due to lack of time in participating in research were identified by nurses as other barriers for research (Cooke and Green 2000, Fink et al. 2005). Ball et al. (2014) highlighted that due to lack of time, even patient care were left as not done. This was a NHS survey of 2917 nurses working in 401 general or surgical wards in 46 Acute Hospitals. In this study, 86% of the nurses reported that they could not complete their patient care due to

lack of time. The majority of the patient care left as not done by them were communication with patients (66%), educating them (52%) and developing and updating their care plans (47%). So it would be really challenging for these clinical nurses to do research when they even struggle to fulfil the patient care.

A study in Northern Ireland was conducted by McNicholl et al. (2008) looking at the R&D Culture of nurses within a NHS Trust using the R&D culture index (Watson et al.2005). The study looked at the R&D culture from nurse and organisational viewpoint. The study identified all the barriers and enablers similar to those discussed in the previous section of this thesis (Tanner & Hale 2002). Pighills et al. (2013) conducted a cross sectional study using a research spider cross-sectional survey of Occupational Therapists (OT) in an Australian state (Northern Queensland) from May to June 2011. This study mainly looked at the OTs experience, support needs and barriers to research. The study found that OTs had low research skills and output and they required more support. Like other literature, this study highlighted that the barriers for research amongst OTs included short of staff and time.

Another issue that arose through the literature review was the gender issues of nurses as majority of them are female (Hicks, 1995, 1996). Hicks (1995) conducted a study which found that a good clinical female nurse manager appears to be fundamentally incompatible with being a good researcher. However the results were complex. One of justifications Hicks (1995) has given for this result is that the core skills expected for the clinical researcher are historically assumed to be of males as they are considered to be involved in more scientific and mathematical procedures (Archer 1992). As nursing was considered to be female driven profession and that the participants gender may have affected the results of the previous study, Hicks (1996) conducted a similar study including male participants. This study found that there may be a natural similarity

between male and female nurses, however, male nurses were seen as more positive compared to female nurses. Furthermore, the results of the study shed some light on gender theories and nursing research. In summary, Hicks (1995, 1996) studies found that managers and nurses suggested that the trait of the good clinician was not compatible with a good researcher. One of the reasons for this could be the gender expectations as the majority of the nurses were female. This may explain the reason for low publications and research activity (Hicks, 1996). Walker (1994) also supported this by stating that nursing and research co-exist in a 'troubled' relationship in which gender-related tensions reduces the research activity of nurses. The National census data also suggests that there is still female domination in non-medical professions. As per the Health and Social care Information Centre (2014) on gender demographics, there were 81% of female health care professionals compared to 19% male professionals. So nursing was a female dominant profession and might have resulted in low research output as per the literature.

Furthermore, organisational views and political culture also adversely affected research skills and abilities of nurses (Coghlan and Casey 2001, Meyer et al. 2003). For example, research active nurses were seen as 'outsiders' of the organisation (Meyer et al. 2003). Lack of dissemination of results was also considered as a barrier of research capacity and culture (Cooke 2005). Redwood (2005) stated that lack of appreciation for nurse researchers, especially for qualitative researchers, were also identified as a barrier in the literature (Redwood 2005). All these studies may not be relevant for this study; however these do shed some light on the research culture domain.

A study by Pager et al. (2012) used the RCC tool in a study looking at the motivators, enablers, and barriers to RCB in AHPs. Barriers identified in this study were more likely to be extrinsic factors such as workload and lack of time. Some additional factors were identified as

barriers, such as a desire to keep at the "cutting edge" as well as a lack of exposure to research. Commonly identified barriers in AHPs were lack of research time, funds, skills, backfill, research infrastructure, and other work taking priority (Pager et al. 2012). However, RCB programs with relevant strategies to deal with the barriers and motivators helped the AHPs to improve research outputs and research activities (Ried et al.2006, Ried et al. 2007, Cooke et al.2008, Cooke et al 2006, Pager et al.2012).

As discussed earlier, lack of awareness and knowledge was considered as another main barrier to nurses' and AHPs' research culture. Lack of knowledge could be about the clinical trials or research studies happening in their clinical setting or could be about the research process. Lack of knowledge about clinical trials may lead to compromised patient recruitment into clinical trials. Though clinical trials may not be mainly driven and facilitated by nurses or AHPs, they can contribute to these clinical trials by facilitating the research processes and patient recruitment. Also, clinical trial recruitment was not the focus of this thesis. However, it was important to identify this issue too because, recruitment is also a research process which is influenced by the research culture. The National Institute of Health Research (2013) conducted a survey using mystery shoppers that demonstrated how poor many hospitals are at helping patients to take part in clinical trials due to lack of information and awareness. A visit by 'Mystery shoppers' at 82 hospitals in England found that 91% did not have information readily available about the clinical trials happening in those hospitals. More than half of the receptionists in their hospitals did not know where to refer the mystery shopper for more information about clinical trials. Mystery shoppers found that the staff were not knowledgeable about clinical research opportunities. Although nurses and AHPs were not mentioned in this Mystery shoppers report, each group nevertheless must be aware and bear responsibility of knowing about research and informing patients about research. As stated in the introductory

chapter of this thesis, the NHS constitution (DOH 2013 a) states that the principles of the NHS involve

> *"commitment to innovation and to the promotion and conduct of research to improve the current and future health and care of the population".*

The Constitution (DOH 2013 a) also highlighted that patients needed to be informed of any clinical research relevant to their need and choice. Specifically, it states that:

> *"The NHS will do all it can to ensure that patients, from every part of England, are made aware of research that is of particular relevance to them."*

There was also evidence in the literature to suggest that nurses and AHPs were struggling to build research capacity and to improve their research outputs (Borbasi et al.2005, Jackson 2005, 2008). Also, literature highlighted that there are barriers and motivators for improving the research capacity and culture for nurses and AHPs, especially in clinical setting (Ilott and Bury, 2002; Segrott et al., 2006; Woodward et al., 2007). Another important point which came out from the studies were that the strategies and measures should be developed to reduce these barriers and these should be aimed at different levels of the organisation (Bamberg et al. 2010, Ilott and Bury 2002 and Perkins et al. (2011). Pager et al. (2012) suggested that these strategies should target the entire workforce. Hence developing research culture remains as a challenge for nurses and AHPs.

3.6   Research environment

The significance of an environment or infrastructure that supports research was also mentioned in the literature (Blakeman et al.2001; Stineman and Kennedy 2005). This means an organisation should

have an environment that supports research culture, by having more research opportunities, resources training, and support. According to Browne et al. (2002) and Rafferty and Traynor (2003a), within NHS Trusts, value of leadership was highlighted for the research capacity development with-in NHS organisations. In 2001, DOH created the National Co-ordinating Centre for Research Capacity Development to develop research capacity for nurses, midwives and AHPs. Later on, attempts were made locally, nationally and internationally. Nationally, the National Institute for Health Research (NIHR) and the clinical research networks (CRNs) were formed in 2006 (NIHR 2015e). Through CRNs, nurses, midwives and AHPs had opportunities to become involved in research. 'Developing the best research professionals' (UKCRC 2007) examined the issues relating to nursing research within the NHS and made recommendations to address the current barriers to its ongoing development. Later, the Chief Nursing Officer (CNO), Economic and Social Research Council (ESRC) and the Higher Education Funding Council for England (HEFCE) have jointly formed an integrated Clinical Academic Training Programme for nurses and allied health professionals (Figure 3:3).

This clinical academic career development was formed to support these professionals at different levels of preparation. The training Programme included an internship, Masters Programme (Research Methods) followed by doctoral, lectureship, post-doctoral and senior clinical lectureship awards (HEE 2015a). In the sixth round of NIHR annual awards being published in 2015, up to 35 PhDs , 9 Clinical Academic Training (CAT) lectureship along with 11 CAT doctoral Research have already been completed (NIHR 2015c). This helps to maintain leadership opportunities for nurses and AHPs by combining research and clinical roles.
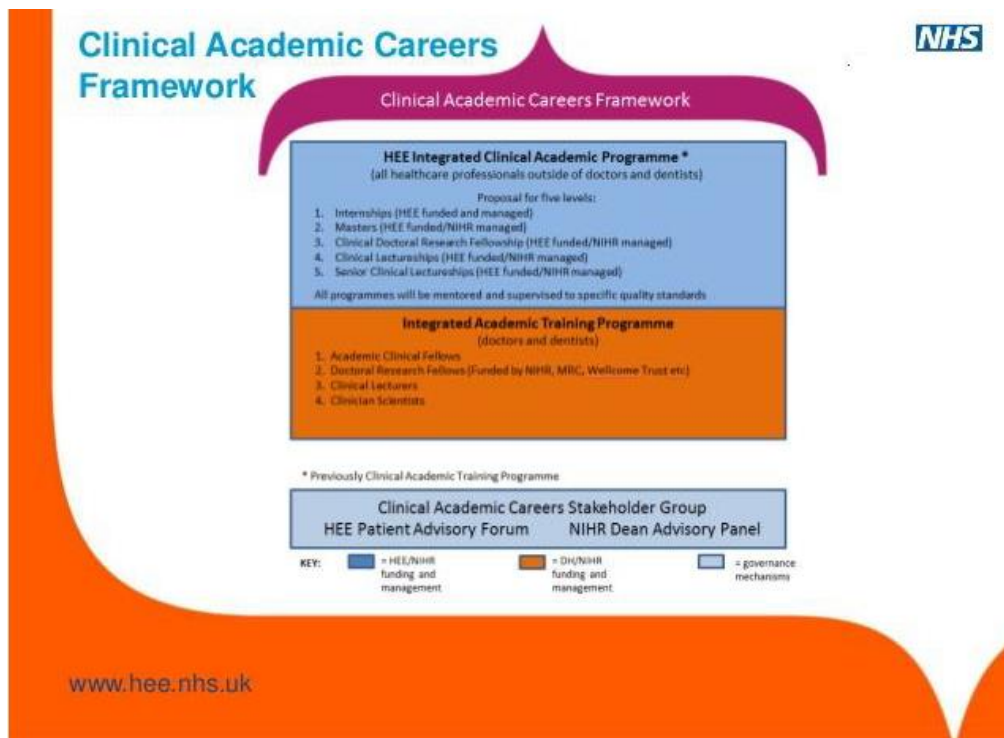
Figure 3:3 NIHR Integrated Clinical Academic Programme for non-medical healthcare professions

The Internships, within the HEE/NIHR Integrated Clinical Academic Programme, was administered and managed by the LETB's (Local Education and Training Boards). This had also been helping in providing the first step for healthcare professionals interested to enter a clinical academic career by developing research skills and expertise. As Clark (2014) stated , there is an embedded culture in medicine that acknowledges clinical academics and clinical academic leaders as being essential to a vision of evidence-based medical practice. That is, they have a prominent research culture and this is not yet evident in nursing or in the allied health professions. The entry of recruits to the NIHR training scheme would therefore be a possible way to achieve equality with medics. However, these trainees are often working in a professional culture which has not totally signed up to a vision of evidence-based nursing practice or clinical academic nursing careers and leadership. Hence, the current environment needs to be improved in terms of research culture as

they may find themselves acting as change agents in an organisation, often in relative isolation, whilst they continue their clinical academic career development.

3.7   Collaboration

The literature recommended that a research culture involving partnerships and collaborations can provide access to more funding, resources and infrastructure. However, they are not being encouraged enough in the current culture. In a study by Latter et al (2009), a clinical academic career framework was created for nurses, midwives and AHPs to combine clinical and academic roles and was found to be effective in delivering applied clinical research for quality health care delivery. Golenko (2012) suggests that those partnerships with joint positions between clinical and academic organisations helped in obtaining access to experienced researchers and their expertise, training, and opportunities to learn and apply research skills. Many authors highlighted that in order to encourage postgraduate education and smoother movement of researchers between academic and clinical institutions, a research culture with collaboration and jointly funded positions was necessary (Pickstone et al.2008, DOH 2012a, Perry et al.2008).

3.8   Difference between nurses and AHPs

When looking at the difference in research culture between nurse and AHPs, the barriers and motivators reported are similar in both professions (Finch et al.2013, Lazzarini et al.2013 and Pager et al.2012).

As discussed in this chapter, the main barriers consistently included lack of time for research due to increased clinical loads and perceived research skill deficits while motivators included personal desire to improve skill sets, job satisfaction and increased

opportunities for career advancement for both professions. However, studies indicated that the allied health professions have significantly lower research capacity and culture compared to the nursing and medical professions (Patel et al.2011, Holden et al. 2012b, Pickstone et al. 2008, and Ried et al. 2006). Though AHPs reported very high levels of interest in research on the one hand, on the other hand they reported very low levels of capacity to actually participate in research activities (Stephens et al. 2009, Ried et al. 2006 and Holden et al. 2012b).

3.9   Summary

Since 1995, there were policy initiatives in the UK to build research capacity among nurses and AHPs through a national coordinated approach. However, the extent to which nurses and AHPs were actually skilled, interested, involved or had undertaken research activities remained unclear. Similarly, there was a large volume of literature about evidence-based practice, but not many literature of nurses and AHPs undertaking research (Woodward et al, 2007). The literature review has identified the problems in developing research capacity including barriers and looked at the evaluations for RCB activities. The available literature in this field has mainly focused on the challenges of developing research capacity rather than strengthening research culture, and explored some evaluations for Research Capacity Building. The tools and frameworks used to measure research capacity and research culture were also discussed in the literature. The Australian Research Capacity and Culture (RCC) tool (Holden et al.2012a) was the only available validated tool to quantitatively measure the research culture, using a whole system approach, based on Cooke's framework.

The literature review also suggested the organisation was in a better position to influence nurses and AHPs research capacity and culture by creating links between and across the different levels such as

individual and team. A whole organisational approach can aid in maintaining and developing a research culture. Support and facilitation from managers were also highlighted as another aid to improve research culture. The roles of research champions or research leaders were considered influential for research culture. Barriers to research culture in nurses and AHPs were organisational issues, such as a lack of research management and support, lack of knowledge and experience of research alongside the other barriers such as staffing, clinical priorities, finances and managerial support that were outside their control. Evidence from the literature also suggests that Clinical Academic Training programmes may aid in creating a prominent research culture throughout the NHS organisation.

The literature review has summarised the evidence that showed Nurses and AHPs were always under pressure to build and develop research capacity and to improve their research performance, and to do this by obtaining academic and clinical achievement in relation to quality research outcomes. Also, there were a number of barriers identified by the literature such as the lack of staff, time, and funding, competing work priorities of staff, lack of research skills, as well as limited support and infrastructure to conduct research activities. Other barriers identified were organisational issues, such as a lack of research management, lack of organisational support, lack of knowledge about undertaking research and support. The enablers for research were effective leadership, collaboration, organisations that value research, strategies and frameworks, positive collegial relationships, research training, managerial support and research processes and infrastructure. There were a number of studies identifying the challenges and strategies for developing a research capacity and culture for nurses and AHPs, particularly in the clinical setting. However, there were no studies actually measuring or comparing research culture itself at three important levels (individual, team and organisation) of multi-professionals such as nurses and

AHPs in a clinical setting using a validated tool. It could be concluded from this review that the organisation, by linking in with all levels, should take responsibility for promoting a research culture by reducing barriers and promoting enablers and motivators for research. The next chapter focuses on methodology and methods used in this study and the justification for choosing them.

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4 CHAPTER 4: METHODOLOGY

4.1 Introduction

This chapter looks at the design used in this study to identify if there was a difference in research culture of nurses and Allied Health Professionals (AHPs) in a research focused and a non-research focused healthcare organisation in the UK. It includes the aims and objectives of the current study, followed by a description of the rationale behind the chosen mixed methods approach. The methods, including the data collection and analysis techniques are also described in detail in this chapter, along with a discussion about ethical issues.

4.2 Aims and objectives of the study

From chapter 1, it is clear that the primary aim of this study was to explore the research culture of nurses and AHPs in two hospitals.

4.2.1 Aim

The primary aim of the research study was to explore the influence of research focused exposure on the research culture of nurses and AHPs in the UK and to identify if there was a difference in the research culture between a research focused and non-research focused clinical area.

4.2.2 Objectives

- To assess the research culture of nurses and AHPs at individual, team and organisation levels in a research focused and a non-research focused areas using a validated research culture and capacity tool.

- To provide baseline understanding of research culture of nurses and AHP in a research focused and non-research focused hospitals.

- To undertake focus group discussions with research active and research naive groups to provide contextualisation of the study results.

- To explore the views of senior managers about the research culture using semi-structured interviews

- To identify the barriers and motivators for research culture

The study had three phases which will be explained in later sections.

Phase 1: Web based survey

Phase 2: Focus groups meetings

Phase 3: Semi-structured interviews of senior management team

4.3   Background and context to the study areas and participants

As described in Chapter 2, this study was conducted in City Hospital and Riverside Hospital. Riverside Hospital joined City Hospital during the data collection phase of this study. When Riverside Hospital amalgamated with City Hospital it provided an opportunity for the researcher to understand what research meant for the staff and to also work in research at Riverside Hospital too.

The researcher had worked for 14 years at City Hospital with the last 8 years spent in research at the time of the data collection for the study. Hence, the researcher had a good insight into City Hospital's research focus and culture. As this research was conducted in the researchers own workplace, it could be argued that this is an insider research. Naples (2003:46) defined insider research as the study of one's own social group or society. In other words, this term insider is

used where the researcher has a direct involvement or connection with the research setting (Robson 2002). On the other hand, an outsider researcher is studying subjects external to his/herself (Denzin and Lincoln 2000). As any form of research, both insider and outsider research has its own pros and cons associated with it. Dwyer and Buckle (2009) suggests that insider researchers obtain richer data by engaging research participants more easily and use their shared experiences to gather a richer set of data. However, outsiders may find it difficult to gain access to research participants (Chawla-Duggan 2007; Gasman and Payton-Stewart 2006). Kanuha (2000) argued that insiders may also find it difficult to separate their personal experiences from those of research participants questions about potential bias in their research (Serrant-Green 2002); whereas outsider researchers are frequently valued for their objectivity and emotional distance from a situation (Chawla-Duggan 2007; Gasman and Payton Stewart (2006). It could be argued that this study is a biased one, in which the researcher designed the study with a pre-existing mind-set and knowledge about the hospitals' research cultures. Therefore, being an insider research, it was important to look at the pro and cons of being an insider in this study and this will be discussed in the later section(4:15) of this chapter.

4.4   Research approach

Research approaches can be primarily inductive or deductive. In the deductive approach, someone tries to test a theory, in which a hypothesis exists and a research strategy is developed to test the theory or hypothesis (Saunders et al. 2009). However, in the inductive approach, the researcher tries to develop a theory by collecting and analysing data in the related field of query. This is also known as building a theory. Marshall (1997) has explained the theoretical use of both inductive and deductive terms as follows:

"When researchers first begin to open up any new line of enquiry there will be no useful theories available from which to deduce propositions for testing. Knowledge has to begin with collecting facts and then trying to find some order in them. This is known as induction. Deduction is the technique by which knowledge develops in more mature fields of enquiry. It involves a sort of logical leap. Going a stage further than the theory, data is then collected to test it." (Marshall, 1997:17)

This thesis was an empirical study using a mixed methodology. Usually mixed methodology uses both deductive and inductive methods. In this study, both quantitative and qualitative methods were used to substantiate and harmonise findings, and hence this study took a balanced approach to research. However, there were no theories developed from this study. This study's research process collected the data using different methods such as surveys, focus groups and semi-structured interviews.

4.5 Research methodology

The decision in choosing the methodology depended on the aims, objectives and research question of the study (Crabtree and Miller 1999; Denzin and Lincoln 2000). There are some research questions that cannot be answered by pure quantitative or qualitative methods, as in this study. Also, one methodology should not be viewed as better than the other because each method produces different but unique and complimenting types of knowledge (Kelle and Erzberger 2004). To answer the 'wh' questions such as 'where', 'what', 'who' and 'when', quantitative methods are useful (Crabtree and Miller, 1999; Silverman 2013). However, for 'how' and 'why' questions, or to understand the depth and have a clear picture of a query or phenomenon, qualitative methods are useful (Symon and Cassel 1998). In order to provide the analysis and interpretation of a particular environment, in this case the research culture in a hospital,

Collis and Hussey (2003) argued, a qualitative research approach would be appropriate in conjunction with the quantitative methods.

4.6 Mixed methodology

Researchers and scholars have been using combined methods including qualitative and quantitative methods to study a single area or phenomenon. This was used to provide a comprehensive analysis of the research problem (Davies 2014). Mixed-method research aids in data confirmation by using qualitative data along with quantitative data and thus improves the validity of the data and the study results (Halcomb et al. 2009). Mixed methodology has been called different names by different researchers including multi-strategy (Bryman 2004), multi-methods (Brannen 1992), mixed methodology (Tashakkori and Teddlie 1998), or mixed methods (Creswell 2003; Tashakkori and Teddlie 2003). In this study, data were collected using both methods and integrated and analysed to present the results or findings. Rossman and Wilson (1991) detailed the three main reasons for linking qualitative and quantitative data. These were to do triangulation, to develop richer and thicker information and to inspire new ways of thinking by giving different views and insights. Triangulation indicates that more than one method is used for a study in order that the results of a research study can in effect be doubled- (or even triple) checked. This is also known as cross examination (Offredy and Vickers 2010). Triangulation is broadly defined by Denzin (1978: 291) as

"*The combination of methodologies in the study of the same phenomenon.*"

Data triangulation can be explained as a way of collecting data at different times or by using different methods as explained by Easterby-Smith et al. (2001). The use of triangulation in research has been explained by many authors. Some have pointed out that

triangulation is used to increase validity of the study findings (Webb et al 1966, Smith and Kleine 1986, Denzin 1978). However others have stated triangulation increases the deeper understanding of study phenomenon (Olsen 2004). This is because triangulation can be using multiple methods to study the same phenomenon (Jick 1979). This means that triangulation can be based on different methods, different theoretical perspectives, different researchers, different data collection and analysis methods to increase validity. Hence, this leads to different types of triangulation as explained by Denzin (1978) and Kimchi et al. (1991). These are named as methodological triangulation, investigator triangulation, theoretical triangulation, analysis triangulation and data triangulation. As this study has two methods including qualitative and quantitative, methodological triangulation had been used in this study. Moreover, as Thurmond (2001) suggested, methodological triangulation is helpful in studying the same phenomena or area, such as research culture in this study. There are two types of methodological triangulation such as the between-method and within-method type. In the 'between-method triangulation' or across-method triangulation both qualitative and quantitative methods are combined to study a single phenomenon with emphasis given on external validity. However, 'within-method triangulation' gives priority for the internal consistency (Denzin 1978). This study used 'within-method' type of triangulation because multiple methods survey, focus groups and interview within a given single paradigm (research culture) are used for data collection and analysis. That is, the study used both qualitative and quantitative methods to increase the internal consistency and validity of the data collected. This study used quantitative methods by using a cross-sectional survey to measure research culture using a survey instrument; and qualitative methods consisted of focus group discussions and semi-structured interviews. This also helped in neutralising the flaws of one method and strengthening the benefits of other to get a more valid and reliable study result (Hussein 2009).

Along with the survey results, both focus groups and individual interviews are combined in the qualitative data analysis of this study in order to explore the research culture more concisely. Both focus groups and interviews were done with different group of participants, i.e., research active groups, research naive groups, and senior managers. For example, to understand the research culture, focus groups were used with research active and research naive groups and semi-structured interviews were done for senior managers individually. Therefore, triangulation was used in this study to obtain different views about the same phenomenon and would result in increasing the validity and credibility of the study findings (Hussein 2009).

4.6.1 Survey

Survey research was defined by Nesbary (2000:10) as

> *"The process of collecting representative sample data from a larger population and using the sample to infer attributes of the population"*

Surveys helped to estimate the specific characteristics of a population by collecting data from a smaller population rather than from the whole population (Dillman 2008 and Wallen and Fraenkel 2013). According to Leedy and Ormrod (2015), data changes over the time. However, surveys have helped to capture data on a brief moment in time in order to obtain an understanding of the current situation or phenomenon. Nesbary (2000) identified a lack of web surveys in use in the public sector. Although Nesbary's work is old, it was important to mention it here in order to understand why web surveys were superior. Nesbary's study used three surveys to compare the response rate and response time between web surveys and postal surveys. The study results showed that web surveys were faster and had a higher response rate. Since Nesbary (2000), internet technology has developed so much that web surveys have become ubiquitous and used in all sectors, including health research.

Van Gelder et al. (2010) also supported web based data collection because of improved response rate and data quality. Therefore, a cross sectional Web-based survey called Survey monkey™ (https://www.surveymonkey.com) was used for the quantitative part of this research at the initial phase. As McColl et al. (2001) suggested, a well-designed survey questionnaire aimed to collect less biased and reliable data from a representative sample but was open to error and bias from various sources. Subsequently the researcher elected to use a web based approach which avoided the bias of an 'insider researcher' because the web link would be accessible individually by all staff members in Seacole Division and Riverside Hospital.

4.6.2 Survey sample

As there was no formal hypothesis testing involved, a sample size calculation was deemed unnecessary for this thesis. This decision was checked with and confirmed by the university based statistician. Nevertheless care was taken to make sure that the participants were a representative sample of the population of interest in order to achieve valid and reliable results. However, some exploratory comparisons between the hospitals were used and hence the results might be useful to generate a hypothesis for future studies. A convenience sampling type was used in this study because it was convenient to access the staff and facilities in both settings. The sampling used could also be considered as purposive sampling, as the aim was to focus on particular characteristics of the research culture of nursing and AHP staff and would enable staff to answer the research questions. Cresswell and Plano Clark (2011) stated that in purposive sampling, individuals or groups of individuals with a special knowledge or experience with a phenomenon of interest are chosen. Therefore, nurses and AHPs from Seacole Division were selected due to their exposure to research focus. Similarly, Riverside Hospital staffs were chosen for their organisation's non-research focus. The population in this study were the nurses and AHPs of a research

focused and non-research focused organisation which was highlighted by Patton (2002). Patton also suggests the most effective use of limited study resources should be to identify and select 'information-rich' cases or participants. In this study, Seacole Division of City Hospital and Riverside Hospital were the information rich areas. Moreover, it was a choice to do the purposive sampling in this study as the purpose of selecting the Seacole Division and Riverside Hospital were due to those hospitals' research focus.

4.6.3 Focus groups

In qualitative research, different methods are used for data collection, including but not limited to participant observation, focus groups, and interviews. In this thesis, focus groups and interviews were used for data collection as this work was looking at a shared experience of research culture of different individuals in the same organisation. A focus group is a method, in which a group of 6-8 people join together, to discuss a given event/phenomenon; in which they have had exposure or experience (Creswell, 2003, Silverman, 2013) and this was used in this study. In these focus group discussions, there was face-to-face conversation between the research participants and the researcher (Gubrium and Holstein 2002).

The main reason for using focus groups in this study was to interview a number of staff members at the same time on the same topic (research culture), thus representing the wider staff population. Also, it would have been harder too to undertake individual interviews of the nurses and AHPs as this would have clashed with patient care or impacted upon patient care. This was because nurses and AHPs would have needed to take more time out from clinical care for individual interviews. Moreover, the focus groups are considered as less time consuming compared to individual interviews. It allowed exploring the common experiences within the groups. However there are well documented disadvantages to the use of focus groups. For example, if the group dynamics are not appropriate, some people

may dominate the discussion (Offredy and Vickers 2010). The focus groups in this study (the Research Naive groups in City Hospital and Riverside Hospital and the research active group from City Hospital) were pre-existing and hence their dynamics of the groups were not in the control of the researcher. The members of the groups were pre-existing and there was no involvement on choosing different participants. However, as the members knew each other, it helped in easy blending and keeping relationships of team members. Therefore, the group dynamics did not affect the discussions. There were no issues or concerns raised by the group during discussions.

4.6.4 Semi-structured interviews of the senior management team

Focus groups were not considered ideal for uncovering the views on research culture by the senior management team in the hospital. This was because each manager being a decision maker, they might already have their own views and influence on the research culture within their roles. Hence, face to face, semi-structured interviews were selected for them. In the semi-structured interview, open ended questions were asked of the participants based on a topic guide. Open ended questions would allow the interviewee to answer them in their own words (Gubrium & Holstein, 2002, McCracken, 1988). Creswell (2003), McCracken (1988) and Patton (2002) suggested that semi-structured interviews helped the interviewer to prompt and probe the interviewee so that more in depth information could be given by them in an answer to the interviewer's question. Also, semi-structured interviews helped in developing a good rapport with the interviewees; which enabled the interviewee to talk freely during the interviews and hence richer data were obtained. This was supported by Tuckman (1972) in stating that the interview helps to understand and measure what a person has in his head and mind including their likes and dislikes and their attitudes and beliefs. This understanding of interviews was still seen as relevant by Cohen et al. (2011). They suggested that interviews are the best ways to obtain and find out the

ideas and beliefs of participants when compared to other methods such as surveys or observation. To avoid having biased data, the researcher did not contribute to the discussions or add any points to the discussion with her pre-existing knowledge and hence as May (1997) suggested, the researcher tried to maintain her own knowledge without interfering and let the interviewee 'flow' with their ideas.

4.6.5 Framework analysis

In order to analyse the qualitative data, Framework analysis has been used in this study. This method was created in the late 1980s, for use in large-scale policy research by Jane Ritchie and Liz Spencer (Ritchie and Lewis 2003). The Framework approach has been commonly used in health care research to manage and analyse qualitative data systematically. According to Gale et al. (2013) Framework analysis is not linked or related to a specific epistemological, philosophical, or theoretical approach. However, this Framework analysis is used to generate themes systematically in qualitative studies. As this study had used both focus groups and semi-structured interviews, there were a number of transcripts to compare and contrast the data from, without losing any connection with each interviewee's data. According to Ritchie and Lewis (2003), Framework analysis helps to keep and maintain an audit trail of the data analysed which enhances the rigour of the study results. Hence, Framework analysis was an appropriate and suitable choice for this study because this study had specific aims and objectives to meet, within a limited time frame and predefined participants such as nurses and AHPs. Although Framework analysis may generate theories, the prime aim was to describe and interpret what was happening in a particular setting (in this study, the research culture of a hospital).

Framework analysis also could be mistaken for its approach in analysing the data by thematic analysis, in which data are interpreted to find out the patterns and themes (Tesch 1990). However, through thematic analysis, data may get lost and fragmented during the analysis process and may result in data being misread and wrongly analysed. This results in lack of clarity in developing themes and data analysis (Smith and Firth 2011). Attride-Stirling (2001) critiqued this thematic analysis approach as losing its depth. Hence, Framework analysis was used in this study to summarise the data because, it helped to describe and interpret what was happening in the research culture of the nurses and AHPs of the organisations in this study without losing clarity and depth. Moreover, Framework analysis is widely used in healthcare research (Gale et al. 2013). The stages of analysis used in this method are explained in the data analysis section.

4.6.6 Ethics and governance approval

The research project gained University and Hospital approval to carry out this study. The NHS ethics approval was not required as it did not involve any patient data. According to the Governance arrangements for Research ethics committees (GafRec) guidelines (Health Research Authority 2012), research involving staffs that are recruited due to their professional role, does not need to obtain REC review. This was confirmed by the Hospital and Ethics committee. However, approval and governance checks were undertaken locally by City Hospital and the University. For survey participants, there was no separate consenting process as their willingness to complete the survey was taken as their consent. A participant information sheet was provided for the focus group and interviewees and informed, written consent was also obtained.

According to McNamara (1994), the major ethical issues involved in social research were: voluntary participation, no harm to subjects, anonymity versus confidentiality, identifying purpose and sponsor,

and honesty in analysing and reporting data. Table: 4: 1 sums up the information around these ethical issues for the study and how these were dealt with.

Major Ethical issues	Dealing with the study	Issues faced
Voluntary Participation	Participation of the participants was completely voluntary for the three phases. Consent was obtained.	This may cause low response rate and introduce response bias. In order to avoid this, multiple contacts were made using email, interviews, phone calls, visits and meetings Dillman(2008)
No Harm to Subject	NHS Hospital R&D approval obtained for the study to be conducted at clinical places. This study did not include any uneasy or upsetting questions that could cause shame, humiliation or uncomfortable feelings to participants. Confidentiality of the participants were maintained during the data analysis and reporting too which was explained in earlier part of this chapter.	No issues faced
Anonymity versus Confidentiality	Survey participants, focus groups and interview participants' identity were kept anonymous. This means the respondent were not based on what they have responded. Where there were emails provided for the voucher, it was still not possible to track back their responses of the survey. Confidentiality was maintained for all participants by not disclosing the identity of the participants (McNamara, 1994).The introductory email for the survey and invitation letters for focus groups and interviews clearly indicated that the survey responses were treated as being confidential.	No issues faced
Identifying purpose and sponsor	The study aim was mentioned in the invitation mail for the focus groups and senior management team's interviews indicating the purpose of the study. It was also mentioned in the letter that the study was conducted as part of a Ph. D and the university was sponsoring the study.	No issues faced
Honesty in analysing and reporting Data	The study methods and results are reported honestly and accurately.
The problems and weaknesses experienced as well as the positive results of the study were taken on board and reported in the thesis if there was any.	No issues faced

Table 4:1 Ethical issues for the study

4.7 Methods and Tools

The research design of this study employed a survey, focus groups and semi-structured interviews. This section will expand on each method and tool in detail.

4.7.1 Phase 1: Survey and its tool

Initially, the survey questionnaire is looked in this section.

4.7.1.1 Survey questionnaire

As discussed in the literature review chapter, after reviewing other questionnaires and frameworks, it was decided to use the Research Capacity and Culture (RCC) tool in Phase 1 of this study. RCC was a validated tool which had robust scale items investigating the research capacity and culture at individual, team and organisational domains. RCC tool also helped to measure participants' perceptions of their team's and organisation's research skills and their own research culture surrounding themselves (Holden et al. 2012a). The RCC has not been used to measure research culture in the UK before. This study is considered to be the first study in the UK and outside Australia (internationally) using the RCC tool. Unlike other tools, RCC is a validated questionnaire developed to measure research capacity and culture at individual, team and organisation levels.

There were a series of points or wordings in this questionnaire that were included to permit the respondent to rate or measure their individual, their team's and their organisation's research skill levels. These statements or points at each level were judged by the participants according to their appropriateness. These questions in each of the domains (Individual, Team and Organisation) were quantitative. Each question had a 10 point Likert scale in which 1 was taken as 'no skill' and 10 as the high skill, hence the data were ordinal. Mean levels of each question's scores were identified; for

example the mean of question 1 is the weighted mean (mean score) for respondents' answers to question 1. In this study, a mean of 5 was considered as having adequate skills. So above 5 would be considered as more than adequate and less than 5 would be less than adequate. Furthermore, the survey investigated categorical data such as participants' perceived individual research barriers and motivators. It also captured general demographic information (Holden et al. 2012a). The survey participants gender were categorised as male and female and the proportion of each gender in each division was identified. Fisher exact test or Chi-square test was used to evaluate the difference between groups. To help with interpreting the scores and results, there were some extra questions in the tool such as current role, qualifications, questions about barriers and motivators, BRC and research strategy questions were included in the tool. These additional questions were included in the Modified RCC tool given in Appendix 2. The majority of the questions in the tool were quantitative. The number of research items in which respondents involved in the last 12 months was defined as research activity. The survey comprised of 4 sections: (i) skill or success of research among organisation, department and individual domains; (ii) research activities currently involved in or completed in the last 12 months; (iii) barriers and motivators to conduct research; and (iv) participant demographics. For clarity, a screen shot of the small section of RCC is reproduced in Figure 4:1.

1. Trust Level

1.1 Please rate your <u>organisation's</u> success or skill level for each of the following aspects by circling a score on a 1-10 scale (1=no success/skill and 10=highest possible success/skill)

i) has adequate resources to support staff research training	1...2...3...4...5...6...7...8...9...10	unsure
ii) has funds, equipment or admin to support research activities	1...2...3...4...5...6...7...8...9...10	unsure
iii) has a plan or policy for research development	1...2...3...4...5...6...7...8...9...10	unsure
iv) has senior managers that support research	1...2...3...4...5...6...7...8...9...10	unsure
v) ensures staff career pathways are available in research	1...2...3...4...5...6...7...8...9...10	unsure
vi) ensures organisation planning is guided by evidence	1...2...3...4...5...6...7...8...9...10	unsure
vii) has consumers involved in research	1...2...3...4...5...6...7...8...9...10	unsure
viii) accesses external funding for research	1...2...3...4...5...6...7...8...9...10	unsure
ix) promotes clinical practice based on evidence	1...2...3...4...5...6...7...8...9...10	unsure
x) encourages research activities relevant to practice	1...2...3...4...5...6...7...8...9...10	unsure
xi) has software programs for analysing research data	1...2...3...4...5...6...7...8...9...10	unsure
xii) has mechanisms to monitor research quality	1...2...3...4...5...6...7...8...9...10	unsure
xiii) has identified experts accessible for research advice	1...2...3...4...5...6...7...8...9...10	unsure

Figure 4:1 Small section of RCC

For the purpose of the current study, the RCC tool was modified to meet the needs of the social context and the additional questions on BRC were added. This modified tool was approved by the original authors Holden et al. (2012a) in Australia. In order to use this tool for this study, the authors of the tool were contacted during the initial phase of the study itself. They were consulted during the survey design and their permission was obtained to modify it. Also the domains in the questionnaire were renamed to individual, team/ward/department and hospital to match with the NHS terminologies. The modifications are given in Table 4:2. The tool contained a total of 51 questions (18 organisational, 19 team and 14 individual) and had strong internal consistency (organisational Cronbach's a = 0.97; team a = 0.97; individual a = 0.95) and good reliability (intraclass correlations of 0.80, 0.81 and 0.81) (Holden et al. 2012a). The authors confirmed that the extra questions could be included in the tool as the validation was only done for the complete set of items included in the tool sections related to organisation, team

and individual lists. Hence by modifying and adding additional questions, the validity of the tool was not affected.

Terminologies in original RCC	Terminologies used in modified RCC
Consumer	Patients
Domains: Organisational Team	Hospital Team, Ward/Department

Table 4:2: Modification made to RCC

4.7.2 Survey Method

The survey was designed in an online survey tool called survey monkey™ using the Research culture and Capacity (RCC) Tool (Holden et al. 2012a) to measure research culture. Survey monkey was a web service which permits researchers to submit their tools or measures with in a public domain using web service and this was available solely for doing surveys and data collection. Electronic surveys of health professionals have been found by several authors to increase response rates substantively (Fischbacher et al. 2000, McLean and Feldman 2001). All of the questionnaires and measures for the study were available on the Survey monkey link and were presented in a clear, systematic way that enabled eligible participants to complete them on their ward or home computers at their own convenience and time. Figure 4:2 is a screenshot of the survey monkey page with RCC tool.
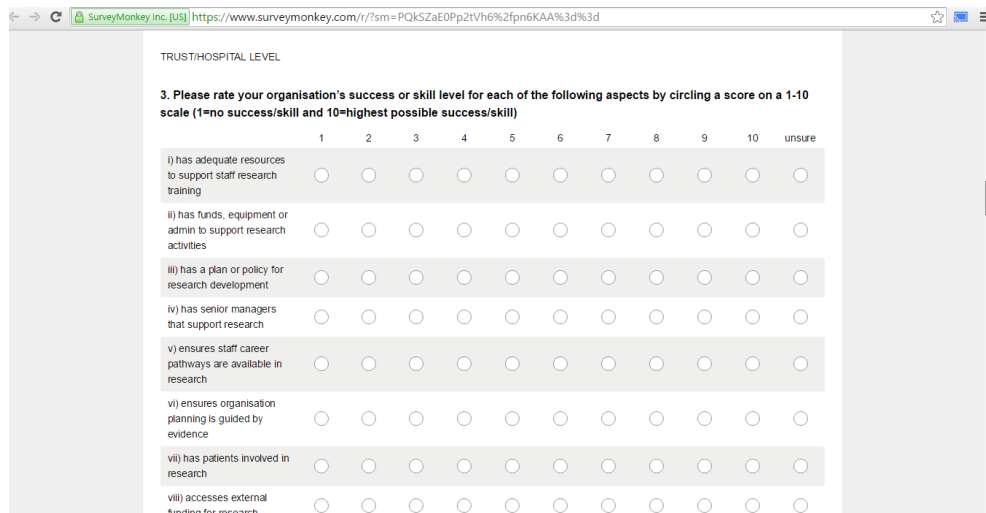
Figure 4:2 Survey monkey webpage of RCC Tool

All the nursing and AHP staff in the Seacole Division of City Hospital and all staff in Riverside hospital were invited to participate in the online survey. The Seacole Division was the biggest Division of City Hospital with an established research focus. A generic email containing the survey information and link was sent to the workforce planning team of the Hospital who then sent the survey email to all the nurses and AHPs in both divisions. Due to the data protection and confidentiality issues, workforce planning was unable to provide the researcher with all the mail addresses and contacts for all staff directly via email in the study. Also, an advertisement was displayed throughout the wards of Seacole Division and Riverside Hospital. The data collection was anonymous with no means of identifying the participants who completed the survey. A systematic review by Edwards et al. (2002) confirmed that providing an incentive increased the response rate. Hence a prize draw was added of a high street 'voucher' for those who completed the survey. This was to promote participation and completion of the survey. However, after completing the survey, it was optional for people to leave their e-mails to be contacted to enter into this prize draw.

4.7.3 Time and period of survey

In order to incorporate the full working week, the survey was sent out via email on the third Monday of May 2013. The survey was accessible to participants until the end of July. This time interval was given, calculated by considering the half term holiday period for schools .This was because as some staff members would be taking time off and hence might not have been able to participate in the survey.

As mentioned in chapter 3, the response rate for a previous survey done by Professor of Nursing on nurses and AHP at City Hospital was low. There were 724 questionnaires received from the whole Hospital, representing a response rate of 24%. This included 549 responses from Nurses, 53 from Midwives and 119 from AHPs. A similar response rate was expected for this survey and so the researcher had made every effort to improve the response rate. The researcher had attended the staff meetings at each area of the division. Staff members were encouraged to fill the survey through their managers' forum and team meetings. Email reminders were sent out two weekly by the nursing and AHP leads to the staff in both divisions. The researcher also attended ward meetings at the handover period to remind staff about completing the survey. By doing the web based survey, the collection of responses and analysis was easy to perform compared to a paper based manual survey. The responses for each participant were then downloaded onto a database so that the results could be easily analysed.

The number of questionnaires sent to City Hospital and Riverside Hospital was 541 and 400 respectively. Approximately 110 completed questionnaires were expected to be received from each site. Due to the chosen purposive sampling method and the web based survey, the exact number of non-respondents and their reasons for not taking part in the study could not be known. It was possible to say how many were sent out. However, it was impossible

to say how many actually accessed the survey or how many had received and opened the survey mail or had seen the advertisement about the survey.

The total number of responses received for this survey was 224 and there were two incomplete questionnaires in the responses; however, the missing answers differed in each of these two questionnaires. Therefore, the incomplete questionnaires were also included in the analysis for each level. Missing answers were left as they were, for analysis purpose. There were lots of unsure answers which were analysed alongside when the other survey results were analysed using the statistics package R 3.0.0™ and the results of these are produced in different tables in Chapter 5.

4.7.4   Confidentiality

The data collection was anonymous; there were no means by which to identify the participants who completed the survey. The study had followed ethical guidelines when dealing with all data sets including the survey data. All data were treated confidentially and this was also mentioned in the introduction section of the survey. It was optional for people to leave their emails to be contacted after completing the survey to enter into a prize draw, as explained earlier.

4.8   Phase 2: Focus group

In Phase 2, after the survey data collection, three focus group discussions were conducted. Two of them were interviews with the Research Naive staff in Wards A and Ward B and the third group was with the Research active group of City Hospital. Table 4:3 illustrated the designation of the focus group participants in this study. The Research Naive Group was a pre-existing organisational structure in the wards where staff members from different disciplines joined together in order to discuss the care of their patients,

especially follow up care and discharge care. Research was never an agenda item for their discussions. However, the research active group of City Hospital was set up with the purpose of supporting staff. The aim of the group was to support nurses and AHPs in the Hospital with a research interest to develop their skills. The group had been in existence for 3 years at the time of the interviews (2013). As there was already a representative sample of research active staff attending this group, it was convenient to select the focus group participants from this group. The aim of this group was to develop and promote a group or community of nursing, midwifery and AHP researchers' throughout the Hospital, provide peer support for any studies that the nurses and AHPs were doing , and address any difficult issues they face to develop and do research in their day to day clinical roles.

Focus group	Participants
Research Active Group	Nursing Research fellow working on a research project Community AHP consultant Research Associate Renal Advance Nurse Practitioner Rheumatology Research Coordinator
Research Naive Ward A	ward manager/sister social worker Occupational Therapist Physiotherapist Acute & Rehab Dietetic Clinical Team Lead
Research Naive Ward B	Occupational Therapist Clinical Lead Physiotherapist of the Intermediate Care Team, Ward Manager, Intermediate Neuro-rehabilitation Staff nurse

Table 4:3: Focus group participants list

In wards A and Ward B, there were established meetings for the Research Naive groups to discuss the patient care pathways. The focus group discussion in Ward B was done as a comparator because Riverside Hospital had no influence from BRC or strategy. A participant information sheet was provided and written consent was obtained from the focus group participants. The questions for the

focus group involved questions around current research culture, their views on research culture, and the issues they identified on research culture. Focus groups were arranged with the permission from the ward manager of the wards and then the researcher led the focus group discussion using the pre-planned questions using the interview guide developed, based on the findings from the survey. That is the questions used in the focus group and senior managers' interviews were generated from survey results.

The interview questions were around the following points .and used as a guide for discussion and were not an exclusive list of questions asked at the discussions.

- What do you think about your research culture?
- Describe your experience with research and support in the organisation?
- Describe the changes that have impacted your research culture?
- Do we have a Nursing, Midwifery and Allied Health Professionals (NMAHP) research strategy cover?
- If yes, what does it cover?
- What are the existing resources available for NMAHP research (staff and facilities prompt)?
- Is research truly collaborative and explain why?
- What are the opportunities for conducting research in your profession?
- What are the areas that research cover in your profession?
- What are the opportunities for conducting research in your profession?
- What are the threats conducting research in your profession?
- Anything else you would like to discuss on research culture?
- What will make the difference to research culture?

4.9 Running the Focus Group Sessions

Sessions were relaxed in a comfortable setting with people sitting round in a circle. This helped to establish the right atmosphere. The focus group started with a mutual introduction. The researcher gave an introduction and explained their name, job role, aims and objectives of the study and why the focus groups were being held. The consent process for the study was also included in the introduction. A brief explanation was given about how the digital recording systems worked and what will happen if there is any issue with the recording system. After explaining the aims and objectives of the focus group, participants were encouraged to talk to each other as a discussion rather than to address themselves to the researcher. Then the participants gave their brief introduction including their name and roles and responsibilities. This helped in establishing a good and familiar atmosphere to conduct the discussion. It also facilitated more interaction within the group. Biscuits and juice were provided as the refreshments. The group size ranged from between 4-5 people. Though the recommended number of people per focus group is usually six to ten (MacIntosh 1993), this was the maximum number of participants obtained in this study. The number of participants in each focus group is illustrated in Table 4: 4.

Interviewees	Number of participants
Research Naive group City Hospital	5
Research Naive Riverside hospital	4
Research Active Multi-professional research group	5

Table 4:4 Number of participants in the focus groups

There were two cancellations on the day itself for each of the focus groups. The reasons for non-attendance on the day were due to clinical pressure, lack of staffing and lack of time. One of the participants could not attend because their manager did not relieve them on the day though they had agreed previously for them to

attend. The sessions lasted one to two hours and the researcher acted as the moderator for the study and had a checklist of activities that she needed to be aware of and do. The researcher took a back seat at first, allowing for a type of 'structured eavesdropping' (Powney 1988). In other words, the researcher made sure that the discussions were on track, without influencing the opinions of the group. Later on in the session, more encouragement was given urging debate to continue and discuss the inconsistencies both between participants and within their own thinking. However, the interviewer made sure that she was not imposing any of her thoughts or ideas into the discussion. If there were disagreements or differences in opinion, within groups, then they were discussed in detail and participants were given opportunity to express their point of view and to explain the reason for their thinking there and then itself.

There was a co-facilitator present to promote engagement and discussion in the focus group. The co-facilitator was independent and was not involved in any discussions. However, this person had insight into the study. The co-facilitator also introduced herself before the discussion started. She made sure that everyone participated and got a chance to speak. Also the co-facilitator and the interviewer made sure that there was no domination of participants taking over the discussion without giving chance to other participants. For example, if there was any deviation from the topic, or if someone was going on too long on a single topic, the co-facilitator directed them to the discussions without actually getting involved in the conversation. At the same time, she was encouraged not to show too much approval (Kreuger and Casey 2000), in order to avoid any particular favouritism to any particular participants. She also kept an eye on the recording equipment and ensured that the tape or batteries did not run out. The focus group sessions were recorded using a digital recorder and data were analysed using the Framework analysis described earlier.

4.10 Phase 3: Semi-structured interviews

This involved interviewing senior managers of City Hospital about their views on the research culture. This helped to obtain the different perspectives to compare and contrast; and to really understand what was happening in terms of research culture. The same introduction pattern used in the focus groups was used for individual interviews too. Introduction about the name, position, aims and objectives of the interview, consenting process and digital recording were explained to the interview participants. Then the interview participant had the chance to introduce themselves explaining their, name, job title and responsibilities. Like focus groups, this also helped to create a smooth and friendly atmosphere for the interview and hence this facilitated more interaction between the interviewee and interviewer. The interview started with simple and open questions. The core part of the interview focused on the questions from the interview guide. There was an interview guide developed prior to starting the data collection. According to Patton (2002) an interview guide has a series of topics or broad interview questions which the interviewer or the researcher uses to explore and probe with the interviewee. The Interview guide had questions which were similar to the focus groups. But it did also have some additional questions such as how did research focused activities including BRC influence the research culture. With the semi-structured interview, the interviewer (researcher) and the interviewee acted as equal partners (Offredy and Vickers 2010). However, the interviewer knew the areas that she needed to cover and allowed the interviewee to explore their ideas, thoughts and feelings. This included many open ended questions and some closed questions too. The interviewer also had a check list to follow during the interview, which comprised of what needed to be done as part of the interview. However, the interviewer gave some prompts in between and asked circumstantial questions depending on how the discussions progressed.

This study used semi-structured interviews as explained in the earlier part of this section. This helped to explore the views of the senior management team on the research culture of nurses and AHPs. In order to obtain good quality data from the data collection in this study, there were efforts made to ensure effective communication with the research participants. This was done by taking enough time to listen effectively, by clarifying the conversations, and giving prompts for conversations when required (Serrant-Green 2005). The interviewees included the Chief Nurse for City Hospital, Professor of Nursing, and the Heads of Nursing for both Seacole Division and City Hospital and the Head of AHPs. Information sheets were given and consent was obtained from these interview participants. Though the interviewer was a senior manager in research at City Hospital, there was no direct relationship, line management or involvement in job responsibilities between the researcher and participants in this study. This was because the senior managers in this study were from the clinical management structure whereas the interviewer belonged to the research management structure. The interview data was recorded using a digital recorder and analysed using Framework analysis as described earlier.

4.10.1 Confidentiality

There was an information sheet and consent form for each participant to read and complete before the focus group and semi-structured interviews. Information sheets and consent forms were emailed to the participants 72 hours before the actual day of the interview. As explained earlier, all the focus group and interview data were recorded onto the digital recorder. Following the interview, the audio recording was removed from the portable device and transcribed using a reliable and secure agency. The data were stored securely as an encrypted file on a password protected computer until transcription was complete. These transcriptions were anonymous and all identifiable data were removed. The audio recording was then

destroyed by the interviewer and the agency; written confirmation was obtained from the agency. Following completion of the study and publication, transcripts and recording were stored on the secure university network at Manchester Metropolitan University for five years before being destroyed. During the study, personal data (such as consent forms to participate in the study and e-mail addresses) and the study data were stored securely at the university and were only accessible by the researcher and the supervisors.

4.11   Data collection

This section explains in detail the data collection method used in this study.

4.11.1 Phase 1

This   included the survey data, which was automatically obtained from the survey monkey as explained earlier in this chapter. Survey responses were automatically saved and recorded in the Survey monkey™. These were then exported into a spreadsheet, and transferred to a statistical software package for in-depth analysis. A statistical package called R X 64.3.0.0™ was used in this study, with the help of a statistician as this was the available one at the time of the research. 'R' was a free software environment for statistical computing and graphics.

4.11.2 Phase 2 and 3

Data collection in qualitative research is different from a quantitative study as the major data collection tool for qualitative was the researcher (Offredy and Vickers 2010).The data collected from the focus groups and interviews is dependent on the researcher. The interview transcripts were analysed by the researcher. This means that the researcher interpreted the data obtained. This was an added

responsibility for the researcher. The researcher always had the understanding that the data remained dependent on her. Therefore, she made every effort to present the data collected in a clear and concise manner. The other data collection tools evolved as a result of ongoing data collection. Say for example, the pre-planned semi-structured interview questions were slightly changed following the focus group interviews as there were more questions to be explored, as needing more information after focus groups interviews. An example for this was asking questions about AHP led research collaborations.

4.12 Validity, Reliability and Generalisability

This section is looking at the validity, reliability and generalisability of this study.

4.12.1 Validity

Validity in research depends on careful instrument construction to make sure that the instrument measures what it is intended to measure. The focus in quantitative research was on the measuring instruments, the test items, survey questions or other measurement tools (Patton 2002, Winter, 2000). "Validity refers to the degree to which an instrument measures what it is supposed to be measuring" (Uys and Basson 1991:80). Validity is a matter of degree and discussion should focus on how valid a test is, not whether it is valid or not (Patton 2002). According to Hammersley's (1987: 69):

> "*An account is valid or true if it represents accurately those features of the phenomena, that it is intended to describe, explain or theorise.*"

Ritchie and Lewis (2003) indicated that the validity of research is conceived as the precision or correctness of the research finding. In this study, validity was achieved by undertaking a mixed methodology to look at the research culture of nurses and AHPs in

both hospitals. By using mixed methodolgy, the research culture was looked at the different angles and hence different data were collected which strengthened the validity of the findings. This approach was supported by Denscombe (2007) who suggested that the use of mixed -methods for examining one issue corroborates the findings of the research and increases the validity of the data. In this study, multiple methods or mixed methods were used to cover a broad spectrum of issues related to research culture and thus it increased the generalisability. Moreover, all the questions posed in the interviews were directly linked to this study's aim and objectives and covered the majority of the aspects of the research culture. Moreover, the questions used in the focus group and senior managers' interviews were the extracts from survey results. For data collection, verbatim transcription had been used in order to increase the reliability, validity, and the veracity of qualitative data collection (MacLean et al. 2004 and Seale and Silverman 1997). Another action to improve the validity of the qualitative data was rechecking the audio recordings. The transcribed data were rechecked by replaying the audio recordings of the interviews and reading the transcription again. The same process was repeated by another qualitative researcher which added to the validity of the data. For veracity, the researcher always maintained trust and told the truth about the research study (Gillon 1994). Also for veracity, the researcher conveyed the truth and passed on information where needed about City Hospital and Riverside Hospital, in a comprehensive and objective way. For example, in order to highlight the research focus of City Hospital, participants were given information about the BRC and funding obtained.

4.12.2 Reliability

Polit and Beck (2013) defines reliability as the degree of consistency or accuracy with which an instrument measures the attribute it has been designed to measure. In order to enhance the reliability in this

thesis, a number of measures were undertaken. For example, the RCC tool used in the survey was a valid and reliable questionnaire, developed in Australia (Holden et al. 2012a). When the tool was modified for the use in this current study, only few words were changed in the titles of each section without making any changes to the contents (Table 4:2) and hence the validity of the tool was not affected. Therefore,   the instrument used would provide a result to make accurate conclusions (Wallen and Fraenkel 2013). However, it was piloted and reviewed for any issues before doing the full survey by the researcher because of different context and geographical area of use (Australia and the UK). The pilot survey was done using a small group of 10 healthcare professionals including a few of the staff members, colleagues and supervisory team in terms of the lay out format, grammar and some of the content words. The pilot helped to identify any issues or flaws and potential causes of confusion, such as any misleading questions which may have potentially resulted in invalidating the responses. Suggestions were also made to adapt the questionnaire to a more local context. The changes suggested were:

- changing the answering method to ticking rather than circling
- changing the order of the levels were changed from organisation, team and individual to individual, team and organisation
- changing the term consumer to patients
- adding motivator factor such as to improve patient care.

The suggested changes were then incorporated into the survey questionnaire as given earlier in Table 4:2. The changes made did not alter or affect the contents of the tool and these were made in consultation with the original authors. This means that the approval was obtained from the authors of RCC (Holden et al. 2012a) from Australia. The original RCC tool and modified RCC tool are attached in appendix 1 and 2 respectively.

As discussed earlier, recording the interviews helped to obtain more reliable evidence and avoided any bias which might have happened if the researcher tried to recall or simply remember the conversation. This approach is supported in the literature by Gray (2013:624) who wrote that "in terms of reliability, it is fairly obvious that taped conversations will tend to present more reliable evidence than hastily written field notes".

The questions were asked clearly so that the participants understood the questions clearly. If the questions were not clear, there were opportunities for clarification and repeating the questions by the interviewer. Also, every interviewee had the opportunity to express or explain their views and thoughts freely and comfortably without any interruption. However, it was acknowledged in this study that the conditions surrounding the research might be different when replicating this current study. Also, this study researcher made every attempt to explain and provide clear methods and methodology so the rationale behind choosing them can be understood. Also this increased the probability of doing the study again if needed, as there are clear explanations given for the methodology. The researcher has made every effort to maintain attention to details of the study, confidentiality and trustworthiness as this relates to a great extent on the skills, competence and rigour of the interviewer.

Reliability was further increased by using triangulation in this study. As Arksey and Knight (1999) suggested triangulation is a strategy that can be used to strengthen the confidence in the results of the research finding. Gray (2004) also confirmed that use of different methods to collect the data in data triangulation would help in overcoming bias and any weaknesses that any individual method would have caused. As this study had collected data by different methods, the study was more reliable by reducing more personal and methodological biases.

4.13 Data Analysis

The analysis of both phases one and phase two and three combined are discussed in this section.

4.13.1 Phase 1

Phase 1 data analysis was done using descriptive statistical methods, which helped to present the quantitative results in a meaningful way. The distribution of the categorical data in the RCC tool, such as each items of research activity mentioned for individual, team and organisation level, had been analysed and presented in this study using percentage, median, standard deviation and inter-quartile range. As explained in the earlier sections on RCC, the tool had a 10 point scale in which 10 was the highest skill and 0 was the no skill. These 0-10 scores were analysed as ordinal data to match with the categorical data used in the RCC tool (Holden et al. 2012a). As this study had not used probability sampling, statistical measures such as confidence interval were not used. In order to find out the difference between City Hospital and Riverside Hospital, Fisher exact test or Chi square test was done for dichotomous variables in the RCC. These included survey participant's demographics, barriers, motivators and research activities. Initially demographic details were examined in order to compare them between both areas and the p value for each demographic were determined. This helped to identify the similarities and differences between City Hospital and Riverside Hospital. The P value of < 0.05 was used throughout the study to indicate the statistically significant difference between each hospitals. The p values, which are presented for demographic data, were by an aggregate score for each of the variables between City and Riverside Hospitals. This was because the individual scores in each variable were too small to provide statistically robust data and results. Survey responses with missing answers were included in the analysis.

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However, there were no values assigned to the missing answers. The questions with no answers did not contribute to the analysis of that question. Also, to deal with missing answers and the relatively high rates of unsure responses, mean scores were calculated for each person. That is the mean individual score, mean team score, and mean organisation score were done in the analysis and are represented in Chapter 5.

4.14 Phase two and three: Qualitative data analysis

As discussed in the earlier part of this chapter, the researcher used semi-structured interviews to collect data from 3 focus group participants including nurses and AHPs and 5 interviews of managers. Framework analysis was used to obtain the results of the qualitative part of this study (Ritchie and Spencer 1994). The data analysis was combined for both focus groups and interview data to develop common themes between both methods data sets. The researcher took a combined approach to analysis, enabling themes to be developed. As explained in the earlier part of this chapter, Framework analysis helped to manage and sort the data systematically to generate themes. There were seven sections for the Framework analysis process and each one is explained below.

1. Transcribing the interview data
2. Familiarisation with the interview
3. Coding of the data
4. Developing analytical framework
5. Indexing or applying the analytical framework
6. Charting data into the framework matrix
7. Interpreting the data (Ritchie and Spencer 1994).

4.14.1.1   Transcribing the interview data

The first step of the framework analysis was transcribing the focus group and interview data. Halcomb et al. (2006, 2007) explains transcription as a process of producing texts from the spoken word recorded or audio taped data obtained from interviews. The spoken words reproduced should be the exact replication of the audio recorded words (Poland 1995). During transcription, data will be closely listened to and noted with clarity which helps in realising and understanding the ideas and themes coming out of the data (Pope and Mays 2007). Normally, the process of transcription takes a long time such as three to four hours of transcribing per hour of interview data. Though the process of transcription was expected to be done by any new researchers, due to lack of time and physical capability issues, transcription was delegated to an external agency, which helped to transcribe the data by an adequately trained person. There were no ethical concerns regarding the use of an external agency as there were no discussions or interviews with the agency which would affect, suppress or upset the transcribers psychologically. Moreover, the researcher was interested mainly in the content, rather than the actual structure of the conversation.

All the transcripts done by the external agency were double checked by the researcher for missing data or errors by playing and listening back to the digital audio-recorded data and reading the transcripts simultaneously. Also, the same data sets were double checked by another qualitative researcher to ensure the validity of the data. Each transcript was examined and double checked two times to avoid any inconsistencies. As this thesis was interested in content rather than how the respondent responded, verbatim transcription was used including long pauses, interruptions and nonverbal communication (such as laughter) were noted within the transcripts. The transcripts contained enough spaces and margins provided in the transcripts for later coding and making notes. An example of the transcript page is given as a screen shot here in Figure 4:3

consultants here have had that level of support.

I: So even if you have had time dedicated, it's not necessarily that there would be output coming out from it?

R3: Yeah.

I: It's good to know that you are a nurse consultant.

R3: I was, yes.

I: How did you find that role?

R3: Yeah, it wasn't my, out of the four domains of that nurse consultant role, that was probably the area I was least engaged in.

I: Is it because of the clinical pressures or?

R3: Partly, because actually you were always, there was always something else clinically that needed to be done as a priority, but I think having done the research we did around patient discharge and then having had that published and we had a lot of support from one of Christi's fellows at that point and actually that really developed our expertise. So I think had I stayed in that role and we would have worked together as a team, we would have gone to do further research definitely.

I: Was it a must that you needed to do a research project to go forward?

R3: Well, it was a requirement of the role but actually we were well supported by Christi at that time and really pushed and challenged to, you know, to progress that work, and I had also started doing, when I was a nurse consultant, an MPhil around research but then didn't, I completed the first year but then didn't complete, I changed career path.

I: Again what was the reason for changing the career path?

R3: I think I felt in some respects as a nurse consultant, I hadn't done a clinical master's. I knew actually if I was going to stay in that role, that's what I needed to do but actually I felt I could have more of an impact and have more of an influence upon clinical practise and influence change

Figure 4:3 Example of transcript

4.14.1.2   Familiarisation with the interview

As explained by Ritchie and Spencer (1994), familiarisation was the next step in the framework analysis process. Familiarisation was done by listening back to the digital audio recordings, double checking the transcripts, reading and re-reading each transcript, highlighting main points and making notes. This helped to get a clear understanding on many pages of transcripts. These transcripts were done on Microsoft word documents which were then uploaded on to NVivo ™, which is a qualitative data analysis (QDA) computer software package. This helped to arrange, organise and manage a very large amount of data systematically. Each generic interview questions were inserted as Heading 1 format. This helped to show these questions in the content panel of the NVivo. Therefore, when clicking on a question, it was easy to see the relevant answer to that

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question. Also, a briefing about each transcript was entered on to the first page of the transcript as an introductory property. This helped to put this information automatically into the interview document properties in NVivo. This process also helped in systematically organising the data using NVivo. Also, a remarkable amount of time was saved due to the use of Nvivo as it freed up time from manual handling of the data such as ordering and sorting.

4.14.1.3 Coding of the data

Using Nvivo, the interview transcripts were coded, however after the first two transcripts were coded, around 92 codes were generated; which was not seen as an effective way of doing the coding process. Moreover, around 25 of the codes were only used once. Hence, it was decided to use Microsoft™ word processor (manually) to generate the data. The notes generated at the time of familiarisation were used at this point to identify the themes. The data itself dictated the themes, ideas and issues. All the transcripts were coded and interesting points were highlighted in yellow colour. The highlights ranged from a word, sentence or paragraph, depending on the importance of the data. The right hand margin was used to write the ideas, comments and questions if there was any and the left hand side of the transcript was used to write the themes. Figure 4:4, given in the next page is an example of a coding process of a transcript page, which was taken as a screen shot of the actual coding table.

Lack of professional drive	I think one of the challenges is for the academic health developments in BRC, it's very, very strongly waited towards the medical side so, you know, there seems to be a ==very flourishing and growing structure of career pathway and posts for research but actually when you get to the smaller professions, although the top is there, it's actually incredibly challenging to sustain it and develop it==. Locally we do and we have quite a lot of research activity and there's a big focus on evidence based practise but it's challenging because there's just no infrastructure.	Medical profession being more research active?? Hard to sustain the research and jobs ?lots of activities for AHP??I
Career pathway		
Infrastructure		What's infrastructure??
	I: Do you think the same, people on the group like the ward AHPs?	
Research strategy	R4: I think that probably what happens at the top is ==very medically focused== so if it doesn't have a direct relationship for staff, if it's not relevant for them, they'll, sort of, know about the words and they'll know about the titles of places or the titles of people, although maybe there's a strategy in place but really what matters to them is what influences them. I think that they feel it's challenging because of the work context but I think that there's a genuine interest in it and there's a desire to practise research for people who are interested and I think there is ==not a supportive culture within the directorate and== we do try to harness the skills we've got.	Medical focus Staff have interest More interest than experience??
Lack of support at middle level		
	I Have you noticed any change in the research pattern and culture of the organisations?	
Financial constraints	R: I think from a national perspective, the ==funding opportunities== have got tighter and there seems to be again a clearer strategy as to what their priorities are and what they want, so I would say it's probably gotten more challenging to attracting and the envelope of funding has got less. I think the other challenge is we need to develop strong partnerships with	Change in priority Challenging funding streams

Figure 4:4 Example of coding process

4.14.1.4 Developing analytical framework

After generating the codes and redefining them, they were grouped under a theme which was the initial analytical framework. This process was repeated until no new codes were generated. Figure 4:5 shows a summary of the coding process.

```
┌─────────────────────────┐
│ Codes, highlights,      │
│ interesting points and  │
│ questions on the word   │
│ document                │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Matrix developed with   │
│ properties &            │
│ Dimensions in MS excel  │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Re-enter the codes in NVivo │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Final codes in NVivo    │
└─────────────────────────┘
```
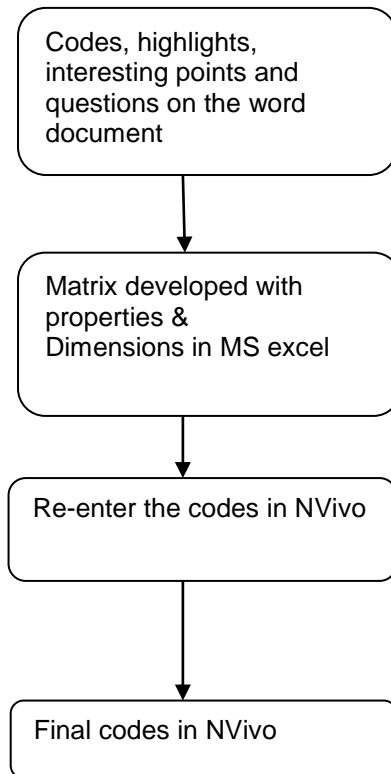
Figure 4:5 Summary of the coding process

The themes and key points that came out from this process formed the basis for the analytical framework .An example of those themes and key points are given in Figure 4:6, in the next page (Ritchie and Spencer 1994).

CODE	DESCRIPTION
Middle level support	
Lack of systems at middle level	Availability of research information
Relationship between team level manager and staff	Manager relationship, Barriers and gaps in communication
Knowledge and skills of manager	Education, information, explanations, teaching,
Delegated responsibilities	More delegation of duties from top to middle? Staff shortage
Work commitments	Clinical workload ,clinical pressure
Changing managers	Difference between changing roles, new managers
Pressures	Clinical and financial pressures at middle level
Support	Not releasing from work, lack of interest
Barriers and enablers	
Financial support	Lack of funding to do research,
Time, staff , support	Lack of funding, shortage of staff, communication
Education and training	No mentors or research training, lack/knowledge of courses
Lack of collaboration	Lack of understanding or research and collaboration? or lack of collaboration
Clinical pressure and staffing	Increased clinical pressure and financial measures to research
Lack of discussion	Research is not the agenda for discussions

Figure 4:6 Examples for the analytical framework

4.14.1.5   Indexing or applying the analytical framework

In this step, the highlighted portions of the data matching to a particular theme were indexed in all the transcripts of the interviews. Figure 4:7 is an example of this process taken as a screen shot and is given in the next page.

	I don't think so. I don't know but I suppose from my perspective, a bit selfishly, the majority of the workforce are nurses and midwives and we have a ==professor of midwifery so I think we need a professor of nursing.== ==I think== they've got sufficient calibre and capability and they'll be able to take the AHPs along with them.	Organsiational Infrastructire and facilities
R2:	I think it's where you do see it. I think actually there's a very strong focus corporately at trust level and I think there's a strong ==focus at specialty level.== ==I think the gap's probably at a divisional level, really.==	Middle level support
I:	Why do you think there could be a gap?	
R2:	I think because research is very disease, or topic, specific so it has a natural focus on whatever it is you're researching, whether it's dementia or falls, whatever element of clinical practice or disease base you're researching. Therefore, you do ==generate a level of interest and energy and enthusiasm locally in that group of people who are interested in== that specific topic.	Lack of skills and knowledge at individual level
	Then,as a trust, we have a responsibility to ==collect and collate and make sure our research profile isthere and== is impressive	Organisational infrastructure and facilities

Figure 4:7 Indexing or applying analytical framework

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4.14.1.6 Charting data into the framework matrix

The indexed data from the transcripts were arranged in a matrix of the thematic framework developed in the earlier stage. That means, the data taken from its original textual context are replaced in charts with headings and subheadings that were drawn during thematic framework (Ritchie and Spencer 1994). After all the data had been coded, all the data were summarised in the matrix for each theme using Microsoft excel™ as illustrated in the screen shot of the process in Figure: 4:8. There was one row for participant and one column per code in the matrix. Each category of themes had different pages in excel. There was an audit trail of where the data came from so that it was easy to find out its origin.

Figure 4:8 Example of charting data into framework matrix

4.14.1.7 Interpreting the data

The final stage of analysis matched with the objectives of the qualitative analysis stated by Ritchie and Spencer (1994:310)

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"Defining concepts, mapping range and nature of phenomena, creating typologies, finding associations, providing explanations, and developing strategies".

These objectives aim to reflect the real data or the real views of the interview participant and this researcher had made every attempt to reflect this. In this process, the matrix was reviewed and process and links were made between each category and themes. There were also links between the themes generated from the analysis and the objectives of the study. Interpretation of the data included providing possible explanations for the themes and codes developed.

4.14.2 Summarising findings

The results of the Framework analysis are presented in Chapter 6. The themes developed are also explained in that chapter. Then, the data collected by the survey was compared to the Framework analysis of the interviews in order to support the analysis of the final findings of this study. As explained in the methodology section of this chapter, this process of triangulation of results from quantitative and qualitative data of this study helped to increase validity of the study findings. However, when insider research is considered, there are still some issues around validity of the data along with other issues. Hence the next section is focusing on the advantages and disadvantages of insider research.

4.15 Advantages and disadvantages of being an insider.

As the researcher was a research manager at the City Hospital, there were issues and problems associated with being an insider, along with the benefits.

4.15.1 Depth of information and Knowledge versus objectivity

Although being an insider helped the researcher to blend into situations without disturbing any social or clinical settings in this study it could be argued that this involvement was very subjective (Aguiler 1981). DeLyser (2001) also suggested that great familiarity is a reason for losing objectivity, even though the researcher had a pre-existing knowledge of the context of the research (Bell 2005). The researcher in this study was aware that there would be problems experienced in terms of subjectivity and objectivity. Therefore, the researcher has made efforts to avoid making assumptions based on her knowledge. Also, the researcher tried to maintain a distance without getting too much involved in the discussion. The researcher also used a tactic, as suggested by Chavez (2008), to avoid receiving deferring responses from participants during interviews (such as you know what I mean, like is said, or I mentioned earlier etc.). However a complete detachment from the survey, interview or focus group discussions were impossible to obtain the true nature of the data. This approach is supported by Sandelowski (1986), who suggested that engagement is required for the qualitative researcher rather than detachment and it is the objectivity of the findings that is the paramount rather than the researcher.

Though the researcher was an 'insider', she acted as an `outsider' in order to collect, report and analyse the data in this study. As Johnson and Christenson (2013) suggested, in order to avoid invalidating or distorting reality, measures were taken, as far as possible, to reduce the influence of the researcher's professional role and subjectivity. Also to maintain the objective approach, this study was designed to discover the trust that lies within the object of investigation, in such a way that the reality was maintained and existed without depending on any consciousness (Crotty 1998). This approach is also supported

by Hammersley (2000) who states that the researcher should be as objective as possible in order to collect and present the reality and true nature of the data.

4.15.2   Honesty versus Bias

Insider research is subject to researcher bias because of its nature of studying one's own culture. Researcher bias refers to the process whereby the researcher's personal beliefs, experience, and values influence the study methodology, design and or results (Green 2014). This is supported by Preedy and Riches (1988: 221) stating that respondents may face problems of tempering the truth in the knowledge that fruitful professional relationships … [have] … to continue after the research had been completed". However, Field and Morse (1985) suggested that there is no evidence of increased dishonesty in insider research compared to any other forms of research.

It has been argued that data is assumed to be existing in this world, irrespective of the pre-existing knowledge of the researcher. Charmaz (2006) stated the role of an objective researcher is to discover the data. Therefore, while gathering data in this study; careful attention was made to avoid both potential insider bias and to maintain the validity of the data (Murray and Lawrence 2000). There were many steps taken to guard against bias in the study such as: listening and reviewing the feedback from respondents, careful management and evaluation of the collected data, use of triangulation during data collection and an in-depth understanding of data analysis.

Also, to avoid researcher bias and to maintain honesty, the researcher had a facilitator for the focus group discussion as discussed earlier in this chapter. The facilitator was external to the research divisional and management structure of the City Hospital.

This minimised the risk of any such bias (Fraser 1997). The transcription of the interview and focus group data were done by a reliable agency and the transcription and recorded data was counter checked for accuracy by another qualitative researcher. Therefore all the data which was critical and critiquing in nature were also included in the data analysis to maintain honesty.

4.15.3   Interaction and relationship versus confidentiality and validity

Insider researcher may be more familiar and may have more interactions with the research participants within their organisation (Greene 2014). Because of their familiarity with the group and organisation, insider researchers know how to approach the individuals and hence they are happy to talk and discuss the issues with someone who understands (Bell 2005). As a research manager, the researcher had a considerable credibility to all the staff and to the organisation which helped to get a greater level of openness from the staff to the survey, focus groups and interviews.

This close interaction and relationship may cause issues around confidentiality and the validity of the data collected. However this was argued by Hockey (1993: 204-205), stating that

> "In effect, because the wider social structure classifies the researcher and informants in a similar or identical fashion, this creates greater confidence between the parties ... One of the results of this trust and exposure to the most intimate of details is that the insider researcher is able to appreciate the full complexity of the social world at hand."

In this thesis, all research participants were informed and consented that the information collected as part of the research could be kept confidential. Bell (2005) suggested that the holding confidential

information about colleagues and or the institution under study has the potential to negatively affect relationships between the researcher and the participants. However, in this thesis, as mentioned earlier, the researcher had no direct management or relationship with any of the research participants and hence there were no concerns around the issues related to interaction and relationship versus validity and confidentiality.

4.15.4   Power versus gaining access

Being an insider, it could be both problematic and beneficial to gain access. This was highlighted by Green (2014) stating that the insider researcher may be seen as either too much of an insider (assumed that he/she knows a lot about the research culture which results in participants are not open about the discussion) or he/she is seen as too distanced from the group to trust with information, much like an outside researcher. This may result in viewing the researcher as a social stranger rather than a researcher (Aguiler 1981) and placing high expectations on the researcher to gain participants trust (Green 2014). In order to avoid these issues, the researcher in this thesis explained about her role as a researcher in the study, disclosed her identity as the research manager and ensured the participants that all the data collected would be treated strictly confidential. This was supported by Chavez (2008) citing that a large amounts of impression management may be required to maintain rapport and/or identity.

The positive benefits of being an insider in this thesis helped the researcher to utilize the unique insight gained from the role of a research manager at City Hospital. This job helped the researcher to identify barriers, obtain access to the databases, participants for the surveys, (including research active and research naive groups for the

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focus groups and senior management groups for interviews). Moreover, it was easy to send the email reminders to all the participants in both City and Riverside Hospitals. This was achieved by using City Hospital's own secure email system, in conjunction with the workforce planning team, where the researcher had formal contact as part of her management position in the hospitals. This optimized recruitment to phase 2 and phase 3 of this study which would have been a difficult task for an outsider.

4.16 Summary

This chapter looked at the methodology and methods used in this study. A detailed explanation was given about the selection of mixed methodology approach. The survey was used as the quantitative method and focus groups and semi-structured interviews were used for qualitative part of this study. These methods and their selection for this study were described in detail in this chapter. Descriptive statistics were used to analyse the survey data and Framework analysis was used to analyse the focus groups and interview data. The following chapter, 'Chapter 5-Survey Results,' discusses in detail the findings of Phase 1 surveys.

5   Chapter 5: Survey Results

5.1   Introduction

The results of the Research Capacity and Culture tool survey are presented in this chapter. This survey tool involved nurses and AHPs from Riverside Hospital and City Hospital, as described in detail in Chapter 4. The total number of responses received for this survey was 224 giving a response rate of 24% out of 941.The first part of this chapter presents the demographic data of the research participants. In order to identify the areas used in this study, Table 5:1 is reproduced from the methodology chapter, so that it can be used as a reference guide when reviewing the results.

Area covered	Representation in the study
Research focused organisation	City Hospital
Largest research active division of the research focused organisation	City Hospital Seacole Division
Ward used for focus group discussion of the research focused organisation	Ward A
Non-research focused organisation	Riverside Hospital
Ward used for focus group discussion in the non-research focused area	Ward B
Multi-disciplinary teams in both research focused and non-research focused organisation used for focus group discussion	Research Naive group
Multi professional research group	Research Active group
Senior management team such as the Chief Nurse of the research focused organisation, Head of Nursing for research active division of the research focused organisation and non-research focused organisation, Head of AHPs for Research focused organisation, Professor of Nursing and AHPs, research focused organisation	Participant 1, 2, 3, 4 etc. irrespective of the order and title.

Table 5:1 List and names of areas and participants and their representation

5.2 Demographic Data of the survey participants

Table 5:2 displays the general demographic details of respondents in both survey groups. As explained in the methodology chapter, Fisher exact test was used to examine the difference between groups. In the results illustrated here, the percentage for each survey item was identified. The percentages calculated in the study were from valid numbers and not the total number of respondents.

There were a higher number of female participants in City Hospital 87.5% (n=126) compared to 85% (n=68) in Riverside Hospital from the total respondents for each division. Male respondents were 12.5% (n=18) and 15 % (n=12) respectively for each hospital and showed a preponderance of female respondents compared to male respondents. Also, more nurses responded to the survey compared to AHPs in both areas (nurses 71.8% (n=102) and AHPS 28.2% (n=22). More postgraduates responded to the survey compared to other qualified groups from both areas 35.4% (n=51) in City Hospital and 43% (n=34) in Riverside Hospital. City Hospital had 6.9% (n=10) of staff who had completed a Masters in Research course and 2.8% (n=4) had enrolled for the same course. In Riverside Hospital none of the staff had either completed or enrolled in a Masters in a Research course. Furthermore, in City Hospital there were 18.8% (n=27) of respondents who had completed Masters compared to 9.8% (n=14) who are enrolled in this course. However, there were 8.9% (n=7) in Riverside hospital who had completed their Master's degree and 6.3% (n=5) enrolled on a Master's programme. There were 27.8% (n=40) undergraduates in City Hospital compared to 30.4% (n=24) in Riverside Hospital. There were more respondents with no current enrolment in courses in both areas (84.6% (n=121) in City Hospital and 93.7% (n=74) in Riverside respectively).The difference in aggregated score for professional qualification between City and Riverside Hospitals was statistically significant (p=0.03) and for currently involved in courses too (p= 0.16).

		City Hospital	Riverside Hospital	p-value
Gender (n=224)		144	80	0.68
	Female	126(87.5%)	68(85%)	
	Male	18(12.5%)	12(15%)	
Occupation (n=220)		142	78	0.991
	Allied	40(28.2%)	22(28.2%)	
	Nurse	102(71.8%)	56(71.8%)	
Highest professional qualification (n=223)		144	79	0.03
	PhD	2(1.4%)	2(2.5%)	
	Masters	27(18.8%)	7(8.9%)	
	Masters Research	10(6.9%)	0(0%)	
	Certificate	14(9.7%)	12(15.2%)	
	Postgraduate	51(35.4%)	34(43%)	
	Undergraduate	40(27.8%)	24(30.4%)	
Are you currently enrolled? (n=222)		143	79	0.16
	PhD	4(2.8%)	0(0%)	
	Masters	14(9.8%)	5(6.3%)	
	Masters Research	4(2.8%)	0(0%)	
	No	121(84.6%)	74(93.7%)	
Did you know about BRC?(n=223)		143	80	<0.001
	Yes	103(72%)	31(38.8%)	
	No	27(18.9%)	29(36.2%)	
	Unsure	13(9.1%)	20(25%)	
Do we have a research strategy Q15 (n=222)		142	80	0.001
	Yes	71(50%)	20(25%)	
	No	12(8.5%)	11(13.8%)	
	Don't know	59(41.5%)	49(61.2%)	
Research is part of role description(n=216)		137	78	0.003
	No	70 (50.72%)	57(73.08%)	
	Yes	67 (48.551%)	21(26.923%)	

Table 5:2 Demographic variables of the survey participants

In city Hospital, there were 72% (n=103) respondents who knew about the BRC compared to 38.8% (n=31) in Riverside Hospital. However, it was interesting to note that 18.9% (n=27) of respondents did not know about BRC and 9.1% (n=13) were unsure in City Hospital where BRC was in existence. In Riverside hospital 36.2%

(n=29) did not know about BRC and 25% (n=20) were unsure about it. Regarding the research strategy, 50% (n=71) of staff in City Hospital knew about it compared to (25 % n=20) in Riverside Hospital. There were still 8.5% (n=12) who did not know about the research strategy in City Hospital compared to 13.8% (n=11) in Riverside Hospital and the rest in both areas were unsure about it. There were 48.6% (n=67) respondents of City Hospital had research in their job description whereas only 26.9% (n= 21) in Riverside had research in their role description and the rest of the respondents in both areas did not have research in their role description. So overall when looking at the figures and results as explained above, each variables score for City Hospital was higher compared to Riverside Hospital, apart from 'gender' (p 0.68), 'occupation (p 0.991)' and 'currently enrolled in a programme' (p 0.16), all of the demographic variables had a statistically significant difference between Riverside Hospital and City Hospital .

5.3   Research Capacities

In the tables explained in this chapter, the weighted average for participant's research capacity was compared between groups (1=no skill, 10=high skill) at different levels. The numbers of responses for unsure answers were compared between two hospitals and are given later on in this chapter. The answers to the survey questions were not normally distributed. So a non-parametric test (Mann-Whitney U test) was used to compare results between the different groups.

5.3.1 Individual research capacities

Table 5:3 detailed the individual research skills or culture by the two Hospitals and also by profession. The mean and standard deviation are presented as M (SD) in each category. According to the results presented in this Table, survey respondents' rated that they lacked adequate skills to undertake the majority of the aspects of research.

This table also showed there were not many high scores in the majority of the individual skills for both areas. Both hospitals had similar mean scores for 'writing a research protocol' (M 3.99 for City Hospital Division and M 3.5 for Riverside Hospital), 'securing research funding' (2.88 and 2.57), 'writing for publication in peer-reviewed journals' (M 3.67 and M 3.29) and 'providing advice to less experienced researchers' (M3.81 and M3.27) (Table 5:3). Mean individual skill for 'finding and critically reviewing the literature' for both areas were over 5. However, there was a statistically significant difference in the majority of this reported skill level between both hospitals. The same data were analysed to understand whether there was any difference in individual research skills between different professions. The overall mean difference in individual scores between the professions was not statistically significant (p=0.38).

Some capacity scores were even less than 5 in City Hospital Division such as 'using a computer referencing system' (M 4.59), 'designing questionnaires' (4.84), 'using computer data management systems' (M4.75), 'analysing qualitative research data' (M4.23), 'analysing quantitative research data' (M4.36), 'writing research reports' (M4.46). Moreover, there were even scores less than 4 such as 'writing a research protocol' (M .99), 'securing research funding' (M2.88), 'submitting an ethics application' (M 3.54), 'writing for publication in peer reviewed journals' (M3.67), and 'providing advice to less experienced researchers' (M3.81). The mean scores for each of these skills in Riverside hospital were less than City Hospital division. However, items such as 'writing a research protocol', 'securing research funding' , 'analysing qualitative research data', 'writing for publication in peer-reviewed journals', 'providing advice to less experienced researchers' had no statistical difference between City and Riverside Hospitals (p >0.05) and for the rest of the items, the P values were <0.05. These results were consistent with the findings of Stephens et al. (2009) and Howard et al. (2013) regarding participation in higher level research; such as securing funding or co-

authoring a paper for publication, was lower. The last row of Table 5:3 showed that the overall mean score of individual skill for City Hospital was M 4.6 compared to M 3.87 for Riverside Hospital. The difference in the skills of participants for these two different hospitals was statistically significant (p= 0.01). Table 5:3 is produced in the next page.

	City Hospital M(SD)	Riverside Hospital M(SD)	P	Nurse M (SD)	Allied M(SD)	P
I)Finding relevant literature	6.93 (2.1)	5.82 (2.53)	0.01	6.65 (2.26)	6.39 (2.38)	0.543
iii)Critically reviewing the literature	6.21 (2.08)	5.19 (2.51)	0.01	5.85 (2.32)	5.94 (2.08)	0.849
iii)Using a computer referencing system (e.g. Endnote)	4.59 (2.69)	3.72 (2.7)	0.02	4.42 (2.69)	3.93 (2.75)	0.216
iv) Writing a research protocol	3.99 (2.6)	3.5 (2.42)	0.23	3.63 (2.44)	4.29 (2.68)	0.116
v) Securing research funding	2.88 (2.31)	2.57 (2.31)	0.21	2.74 (2.4)	2.83 (2.08)	0.341
vi) Submitting an ethics application	3.54 (2.71)	2.53 (2.21)	0.01	3.1 (2.59)	3.43 (2.57)	0.192
vii) Designing questionnaire	4.84 (2.63)	4.07 (2.74)	0.01	4.49 (2.77)	4.82 (2.46)	0.321
viii) Collecting data e.g. surveys, interviews	5.52 (2.69)	4.55 (2.82)	0.01	5.11 (2.78)	5.36 (2.78)	0.511
ix) Using computer data management systems	4.75 (2.73)	3.86 (2.66)	0.02	4.35 (2.68)	4.57 (2.86)	0.686
x) Analysing qualitative research data	4.23 (2.68)	3.69 (2.8)	0.09	4.04 (2.75)	4.05 (2.68)	0.871
xi) Analysing quantitative research data	4.36 (2.66)	3.66 (2.83)	0.04	3.88 (2.64)	4.73 (2.89)	0.0468
xii) Writing a research report	4.46 (2.8)	3.48 (2.68)	0.02	3.82 (2.65)	4.84 (2.98)	0.0191
xiii) Writing for publication in peer-reviewed journals	3.67 (2.56)	3.29 (2.58)	0.22	3.27 (2.43)	4.2 (2.81)	0.0295
xiv) Providing advice to less experienced researchers	3.81 (2.6)	3.27 (2.67)	0.1	3.53 (2.64)	3.81 (2.54)	0.327
total Mean score	4.6 (1.98)	3.87 (2.25)	0.01	4.24 (2.07)	4.54 (2.15)	0.38

Table 5:3 Individual level capacity

5.3.2 Divisional/ Ward / Team / Department Level

The Research capacity at the departmental level was analysed and is presented in the next page as Table 5:4. Research capacity at divisional or departmental level was found to be higher in City Hospital compared to Riverside Hospital. When looking at the difference between each individual item at the department level, all

the p values were less than 0.05 indicating that the difference at each item was statistically significant.

Table 5:4 shows that participants in City Hospital survey groups rated that they had 'adequate resources' (mean scores>5) to support staff research training', 'had team leaders that supported research', 'undertook planning that was guided by evidence', and 'had patient involvement in research activities/planning'. The mean score remained above 5 for other items such as 'conducted research activities relevant to practice', 'supported applications for research scholarships/ degrees', 'supported a multi-disciplinary approach to research', 'disseminates research results at research forums/seminars', 'had incentives and support for mentoring activities', 'had external partners (e.g. universities) engaged in research incentives' and 'support for mentoring activities' and 'supported peer-reviewed publication of research'.

Team Level Capacity	City Hospital	River-side Hospital	P Value	Nurse	AHP	P value
i)has adequate resources to support staff research training	5.11 (2.54)	3.46 (2.74)	<0.001	4.41 (2.73)	4.89 (2.67)	0.19
ii) has funds, equipment or admin to support research activities	4.28 (2.62)	2.72 (2.31)	<0.001	3.55 (2.64)	4.21 (2.53)	0.043
iii) does team level planning for research development	4.14 (2.51)	2.53 (2.04)	<0.001	3.45 (2.53)	3.86 (2.29)	0.13
iv) ensures staff involvement in developing that plan	4.41 (2.69)	2.74 (2.35)	<0.001	3.67 (2.72)	4.21 (2.62)	0.12
v) has team leaders that support research	5.74 (2.94)	4 (3.03)	<0.001	4.94 (3.04)	5.64 (3.15)	0.16
vi) provides opportunities to get involved in research	5.41 (2.87)	3.44 (2.61)	<0.001	4.52 (2.94)	5.22 (2.87)	0.09
vii) does planning that is guided by evidence	5.76 (2.82)	4.27 (3.12)	<0.001	5.09 (3.05)	5.58 (2.88)	0.28
viii) has patient involvement in research activities/planning	5.22 (2.89)	3.69 (2.85)	<0.001	4.54 (2.99)	5.02 (2.86)	0.24
ix) has applied for external funding for research	4.73 (3.33)	2.32 (2.29)	<0.001	3.48 (3.05)	4.64 (3.42)	0.012
x)conducts research activities relevant to practice	5.93 (3.05)	3.48 (3.03)	<0.001	4.8 (3.18)	5.67 (3.36)	0.086
xi)supports applications for research scholarships/ degrees	5.53 (3.32)	3.5 (3.13)	<0.001	4.47 (3.37)	5.65 (3.32)	0.020

xii) has mechanisms to monitor research quality	4.95 (3.02)	3.03 (2.63)	<0.001	4.22 (3.11)	4.2 (2.76)	0.66
xiii) has identified experts accessible for research advice	5.6 (3.28)	3.57 (3.07)	<0.001	4.67 (3.44)	5.43 (3.09)	0.12
xiv) disseminates research results at research forums/ seminars	5.36 (3.25)	3.21 (2.85)	<0.001	4.45 (3.29)	5.05 (3.22)	0.17
xv) supports a multi-disciplinary approach to research	5.83 (3.14)	4 (3.19)	<0.001	5.03 (3.28)	5.57 (3.25)	0.26
xvi) has incentives & support for mentoring activities	5.16 (3.08)	3.66 (3.04)	0.00106	4.65 (3.23)	4.55 (2.97)	0.93
xvii) has external partners (eg-universities) engaged in research	5.81 (3.24)	3.56 (3.25)	<0.001	4.9 (3.44)	5.19 (3.37)	0.58
xviii) supports peer-reviewed publication of research	5.53 (3.28)	3.77 (3.42)	<0.001	4.74 (3.46)	5.32 (3.37)	0.27
xix) has software available to support research activities	3.91 (2.81)	2.76 (2.63	0.00225	3.4 (2.81)	3.7 (2.78)	0.36
Total Mean Score	5.28 (2.56)	3.61 (2.48)	<0.001	4.51 (2.61)	5.10 (2.69)	0.14

Table 5:4 Team/ departmental level capacity

It was noted from the mean score that even in the research focused City Hospital, there were not 'enough funding or admin to support

research activities' (M 4.28). The mean score for Riverside Hospital was even lower (M 2.72). The mean score for availability of software to support research activities were also low in both areas (M 3.91 City Hospital and M 2.76 in Riverside Hospital). It was interesting to note that there were many other items at the team level which were less than 5, even in the research focused City Hospital. These items in the questionnaire were 'team level planning for Research' (M 4.14 in City Hospital and M 2.53 in Riverside Hospital), 'ensure staff involvement in developing that plan' (M 4.41, M 2.74) and 'has applied for external funding for research' (M 4.73, M 2.32). The score on 'has mechanisms to monitor research quality' from City Hospital vision was just M 4.95 indicating it Is less than adequate level in City Hospital and was M 3.03 in Riverside hospital.

When looking at nurses and AHP's research skills, the total mean score for nurses were less (M 4.51) compared to AHPs (M 5.10). However, this difference was not statistically significant between the two groups (p=0.14).

5.3.3 Organisational Levels

Similar to individual and team levels, the overall organisational level of support was significantly different in City Hospital compared to Riverside hospital (p<0.001) (Table 5:5). The mean score for the capacity scores for City Hospital was 6.46 compared to 4.92 for Riverside Hospital. However, there was no difference in organisational level support between nurses and AHP professions (p= 0.94).

As illustrated in Table 5:5, survey participants from City Hospital rated their organisation's research skill level to be adequate-to-high enough to perform nearly all identified aspects of research (Mean>5). All of the organisational level skills items mean score were higher than the adequate level (M >6.5), i.e. >M 5. These were: 'has senior

managers that support research' (M 6.6), 'has patients involved in research' (M 6.59), 'promotes clinical practice based on evidence' (M 6.97), 'encourages research activities relevant to practice'(M 6.7), 'has identified experts accessible for research advice'(M 6.65), 'supports a multidisciplinary approach to research' (M 6.64), 'engages external partners'(e.g. universities) in research'(M 6.83), 'supports applications for research scholarships and degrees'(M6.6) and 'supports the peer reviewed publication of research' (M 6.55). The difference in all organisation skills level items between City Hospital and Riverside hospital were statistically significant ($p < 0.001$).Table 5:5 is given in the next page.

Organisational Skills	City Hospital M(SD)	River-side Hospital M(SD)	p	Nurse M(SD)	Allied M(SD)	P
I) has adequate resources to support staff research training	6 (2.82)	4.2 (3.02)	<0.001	5.44 (3.04)	5.41 (2.88)	0.967
ii) has funds, equipment or admin to support research activities	5.87 (2.98)	3.95 (2.96)	<0.001	5.16 (3.15)	5.5 (2.96)	0.494
iii) has a plan or policy for research development	6.34 (2.88)	4.16 (2.92)	<0.001	5.63 (3.08)	5.83 (2.97)	0.749
iv) has senior managers that support research	6.6 (2.93)	4.64 (3.22)	<0.001	5.88 (3.13)	6.14 (3.23)	0.604
v) ensures staff career pathways are available in research	5.88 (3.04)	3.8 (2.84)	<0.001	5.24 (3.15)	5.31 (3.06)	0.888
vi) ensures organisation planning is guided by evidence	6.22 (2.67)	5.14 (3.23)	0.030	5.85 (2.97)	5.89 (2.78)	0.983
vii) has patients involved in research	6.59 (2.93)	4.8 (3.17)	<0.001	6.02 (3.13)	6.05 (3.08)	0.981
viii) accesses external funding for research	6.21 (3.04)	3.72 (2.82)	<0.001	5.24 (3.17)	5.83 (3.18)	0.267
ix) promotes clinical practice based on evidence	6.97 (2.72)	5.66 (3.49)	0.022	6.47 (3.09)	6.68 (2.99)	0.735
x) encourages research activities relevant to practice	6.7 (2.76)	4.89 (3.46)	<0.001	6.1 (3.14)	6.13 (3.08)	0.949
xi) has software programs for analysing research data	5.31 (3.05)	3.34 (2.86)	<0.001	4.7 (3.09)	4.55 (3.22)	0.798
xii) has mechanisms to monitor research quality	6.18 (3.09)	3.89 (3.06)	<0.001	5.52 (3.3)	5.25 (3.14)	0.613

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xiii) has identified experts accessible for research advice	6.65 (2.99)	4.46 (3.22)	<0.001	5.93 (3.27)	5.95 (3.14)	0.953
xiv) supports a multi-disciplinary approach to research	6.64 (2.99)	4.75 (3.36)	<0.001	6.04 (3.3)	5.98 (3.09)	0.787
xv) has regular forums/bulletins to present research findings	6.29 (3.05)	4.22 (3.22)	<0.001	5.55 (3.24)	5.73 (3.29)	0.692
xvi) engages external partners (e.g. universities) in research	6.83 (3.07)	4.26 (3.16)	<0.001	5.92 (3.28)	6.19 (3.41)	0.634
xvii) supports applications for research scholarships/ degrees	6.6 (3.07)	4.59 (3.33)	<0.001	5.88 (3.28)	6.05 (3.32)	0.771
xviii) supports the peer-reviewed publication of research	6.55 (3.05)	4.2 (3.2)	<0.001	5.8 (3.3)	5.79 (3.26)	0.933
Mean	6.46 (2.66)	4.92 (3.17)	<0.001	5.94 (2.93)	5.92 (2.94)	0.94

Table 5:5 Organisational level capacities

5.4 Unsure' answers in the survey responses

The survey results of the study indicated that there were lots of uncertainty amongst City Hospital and Riverside Hospital participants at individual, team and organisational levels. The individual skill or success level had the "unsure" answers at City Hospital, ranging from 0.69% of the responses to 6.9% responses were unsure (Table 5:6). For team capacity, it varied from 6.25 % to 19.44% and for organisational level from 7.5 % to 33%. Whereas Riverside Hospital had varying from 2.5% to 7.5% at individual level. The skill item on, 'submitting an ethics application' at both hospitals was the most common 'unsure' item in both groups (>6%) at individual level.

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	City Hospital n (%)	Riverside Hospital n (%)	p-value	Nurse n (%)	AHP n (%)	p-value
I) Finding relevant literature	1 (0.69%)	2 (2.55 %)	0.60	1 (0.63%)	0(0 %)	1
iii) Critically reviewing the literature	1 (0.69 %)	2 (2.5 %)	0.60	2 (1.27%)	0(0 %)	0.92
iii) Using a computer referencing system (e.g. Endnote)	5 (3.5 %)	6 (7.5 %)	0.31	7 (4.46 %)	3 (4.8%)	1
iv) Writing a research protocol	2 (1.39%)	2 (2.5 %)	0.94	3 (1.9 %)	0 (0 %)	0.66
v) Securing research funding	7 (4.9 %)	3 (3.75 %)	0.95	7 (4.46%)	2 (3.2%)	0.97
vi) Submitting an ethics application	10 (6.94 %)	5 (6.25 %)	1	11 (6.96%)	2 (3.2%)	0.46
vii) Designing questionnaires	1 (0.69 %)	5 (6.25 %)	0.04	2 (1.27%)	2 (3.2%)	0.67
viii) Collecting data e.g. surveys, interviews	1 (0.69 %)	4 (5 %)	0.10	2 (1.27%)	1 (1.6%)	1
ix) Using computer data management systems	1 (0.7 %)	4 (5 %)	0.10	2 (1.27%)	1 (1.6%)	1
x) Analysing qualitative research data	0 (0 %)	3 (3.75 %)	0.08	1 (0.63%)	0(0 %)	1
xi) Analysing quantitative research data	0 (0 %)	3 (3.75 %)	0.08	1 (0.64%)	0(0 %)	1
xii) Writing a research report	2 (1.39 %)	3 (3.75 %)	0.5	3 (1.9 %)	0(0 %)	0.66
xiii) Writing for publication in peer-reviewed journals	7 (4.86 %)	3 (3.75 %)	0.96	7 (4.43%)	1 (1.6%)	0.55
xiv) Providing advice to less experienced researchers	1 (0.69 %)	2 (2.5 %)	0.60	2 (1.27%)	0(0 %)	0.92

Table 5:6 Individual level 'Unsure' answers

Table 5:7 given in the next page shows the difference of uncertainty for different questions in team level between City Hospital and Riverside and between Nurse and AHP's (using Fisher exact test). The number of "unsure" answers for team research capacity was highest for items referring to 'applying for external funding' (19.44 %(n 28)) at City Hospital. There was no statistically difference in any of the items with unsure answers between each hospitals (p>0.05).

	City Hospital n (%)	Riverside Hospital n (%)	p-value	AHP n(%)	Nurse n (%)	p-value
I) has adequate resources to support staff research training	11 (7.64%)	11 (13.7%)	0.16	5 (8.0%)	15 (9.49%)	1
ii) has funds, equipment or admin to support research activities	13 (9.03%)	11 (13.7%)	0.37	4 (6.4%)	18 (11.3%)	0.33
iii) does team level planning for research development	16 (11.1%)	10 (12.5%)	0.83	5 (8.1%)	19 (12.0%)	0.48
iv) ensures staff involvement in developing that plan	14 (9.72%)	10 (12.5%)	0.51	4 (6.4%)	18 (11.4%)	0.33
v) has team leaders that support research	9 (6.25%)	9 (11.2%)	0.21	1 (1.6%)	15 (9.49%)	0.05
vi) provides opportunities to get involved in research	9 (6.29%)	7 8.75%	0.59	3 (4.8%)	11 (7.01%)	0.76
vii) does planning that is guided by evidence	13 (9.03%)	7 (8.75%)	1	2 (3.2%)	16 (10.1%)	0.11
viii) has patient involvement in research activities/planning	9 (6.25%)	8 (10%)	0.31	3 (4.8%)	13 (8.2%)	0.57
ix) has applied for external funding for research	28 (19.44%)	12 (15%)	0.47	6 (9.6%)	(20.2%)	0.07
x)conducts research activities relevant to practice	13 (9.15%)	9 (11.2%)	0.64	2 (3.2%)	18 (11.5%)	0.08
xi)supports applications for research scholarships/ degrees	15 (10.4%)	8 (10%)	1	5 (8.1%)	16 (10.1%)	0.80
xii)has mechanisms to monitor research quality	27 (18.8%)	9 (11.2%)	0.18	12 (19%)	22 (14.1%)	0.41
xiii) has identified experts accessible for research advice	21 (14.5%)	13 (16.2%)	0.85	6 (9.6%)	26 (16.4%)	0.29
xiv) disseminates research results at research forums/seminars	16 (11.1%)	12 (15%)	0.41	7 (11%)	19 (12.0%)	1
xv) supports a multi-disciplinary approach to research	12 (8.3%)	7 (8.75%)	1	4 (6.4%)	13 (8.2%)	0.78
xvi) has incentives & support for mentoring activities	20 (13.9%)	9 (11.2%)	0.68	5 (8.2%)	22 (13.9%)	0.36

Table 5:7 Team Level Unsure answers

Table 5:8 in the next page shows the organisational unsure answers. The number of 'unsure' answers for organisational research capacity was highest for items referring 'to provision of software programs for analysing research data' (30.77 %(n=44)) and 'has mechanisms to monitor research quality (20.83 %(n=30)).

	City Hospital n (%)	Riverside Hospital n (%)	p-value	AHP n (%)	Nurse	p-value
I) has adequate resources to support staff research training	15 (10.42%)	19 (23.75%)	0.011	6 (9.68%)	26 (16.46%)	0.287
ii) has funds, equipment or admin to support research activities	19 (13.19%)	21 (26.25%)	0.0181	8 (12.9%)	30 (18.99%)	0.327
iii) has a plan or policy for research development	19 (13.19%)	25 (31.25%)	0.0015	10 (16.1%)	32 (20.25%)	0.57
iv) has senior managers that support research	14 (9.72%)	14 (17.5%)	0.097	4 (6.45%)	22 (13.92%)	0.164
v) ensures staff career pathways are available in research	16 (11.11%)	25 (31.25%)	<0.001	8 (12.9%)	31 (19.62%)	0.327
vi) ensures organisation planning is guided by evidence	20 (13.99%)	15 (18.75%)	0.346	8 (12.9%)	25 (15.92%)	0.678
vii) has patients involved in research	14 (9.79%)	19 (23.75%)	0.0061	4 (6.45%)	27 (17.2%)	0.0514
viii) accesses external funding for research	28 (19.44%)	26 (32.5%)	0.0344	8 (12.9%)	44 (27.85%)	0.0215
ix) promotes clinical practice based on evidence	11 (7.75%)	10 (12.5%)	0.339	2 (3.23%)	17 (10.9%)	0.107
x) encourages research activities relevant to practice	13 (9.03%)	14 (17.5%)	0.0854	2 (3.23%)	23 (14.56%)	0.0172
xi) has software programs for analysing research data	44 (30.77%)	30 (37.5%)	0.374	18 (29.0%)	54 (34.39%)	0.524

xii) has mechanisms to monitor research quality	30 (20.83%)	24(30%)	0.143	10 (16.1%)	42 (26.58%)	0.114
xiii) has identified experts accessible for research advice	25 (17.36%)	21 (26.25%)	0.123	6 (9.68%)	38 (24.05%)	0.0155
xiv) supports a multi-disciplinary approach to research	16 (11.11%)	15 (18.75%)	0.156	5 (8.06%)	24 (15.19%)	0.189
xv) has regular forums/bulletins to present research findings	24 (16.78%)	19 (24.05%)	0.216	5(8.2%)	36 (22.93%)	0.012
xvi) engages external partners (e.g. universities) in research	19 (13.19%)	18 (22.78%)	0.0893	4 (6.56%)	31 (19.62%)	0.0223
xvii) supports applications for research scholarships/ degrees	20 (13.89%)	17 (21.25%)	0.189	5 (8.06%)	30 (18.99%)	0.0636
xviii) supports the peer-reviewed publication of research	22 (15.38%)	21 (26.25%)	0.0535	6 (9.68%)	35 (22.29%)	0.0345
Mean(SD)	20.5 (7.83)	19.61 (5.09)	0.95	6.611 (3.69)	31.5 (8.99)	<0.001

Table 5:8 Organisational unsure answers

5.4.1 Unsure answers.

When looked at the mean score of unsure answers at individual level. City Hospital had a lower score (M 2.79) compared to M 3.36 for Riverside Hospital.The mean score of organisational level unsure answers were the highest amongst three levels and it was M 20.5 for City Hospital and M19.61 for Riverside Hospital. For both individual and organisational levels, there was no statistical difference in

unsure answers between City Hospital and Riverside Hospital (p= 0.066 and p= 0.95 respectively). Also, the difference in the total mean score of City Hospital and Riverside Hospital were not statistically significant (p=.32). However at team level, the difference on the mean of unsure answers between City Hospital and Riverside Hospital was statistically significant (p= 0.0004). It was also interesting to note that the difference between nurses and AHPs for the unsure answers at all three level and for overall average was statistically significant (p<0.05) (Table 5:9). Furthermore, when looking at the difference of uncertainty (unsurer's answers) for different questions in individual and team level between City Hospital and Riverside Hospitals and between Nurse and AHPs ,they were also not statistically significant (p >0.05). It was also noted that, there were a high number of uncertainties in departmental and organisational levels.

	City Hospital M(SD)	Riverside Hospital M(SD)	p-value	Allied M(SD)	Nurse M(SD)	p-value
Individual	2.79 (3.14)	3.36 (1.28)	0.066	0.86 (1.03)	3.64 (3.08)	P=0.001
Team	15.38 (5.89)	9.5 (1.89)	0.0004	4.63 (2.55)	18.31 (5.27)	P<0.001
Organisation	20.5 (7.83)	19.61 (5.09)	0.95	6.611 (3.69)	31.5 (8.99)	<0.0001
Total	13.63 (9.5)	11.5 (7.5)	0.32	4.27 (3.60)	18.98 (13.08)	<0.0001

Table 5:9 Total Unsure mean (SD)

5.5 Mean Scores each levels

As explained in the methodology chapter, to deal with the missing and unsure responses, mean scores were calculated for each person i.e. mean individual score, mean team score, mean organisation score (see Table 5:10), using Man Whitney U test. For example individual capacity for participant 1 is the weighted mean (mean score) for their answers to individual level questions. Then the mean

of all individual scores were taken and these were M 4.6 for individual level, M 5.28 for team level and M 6.46 for organisational level at City Hospital. Individual mean score was <5 whereas team and organisation level means were over 5 indicating that the research skills at team and organisation levels were above adequate level. The total mean score for City Hospital was M5.35, which is slightly above the adequate level. For Riverside hospital the mean scores were M 3.87, M 3.61 and M 4.92 respectively for individual, team and organisation and hence the skills were not adequate enough. However, there were statistically significant differences in the means scores for individual (P=0.003), team (<0.001) and Organisational (<0.001) from the survey indicating that City Hospital had higher scores on research culture compared to Riverside hospital. The difference in nurses and AHPs research culture were also calculated, but these were not statistically significant as the P values for mean Individual score (0.38), mean team score (0.14) and mean organisational score (0.94) between AHPs and Nurses were above 0.05. Overall, there was a difference (p=0.001) in the mean score of the research culture between City Hospital (5.35) and Riverside Hospital (3.90), but not between nurses and AHPs (p= 0.12).Table 5:10 is produced in the next page.

	City Hospital M(SD)	Riverside Hospital M(SD)	p	Nurse M(SD)	Allied M(SD)	P
Mean Individual Score	4.6 (1.98)	3.87 (2.25)	0.003	4.24 (2.07)	4.54 (2.15)	0.38
Mean Team Score	5.28 (2.56)	3.61 (2.48)	<0.001	4.51 (2.61)	5.10 (2.69)	0.14
Mean Organisational Score	6.46 (2.66)	4.92 (3.17)	<0.001	5.94 (2.93)	5.92 (2.94)	0.94
Total	5.35 (2.11)	3.90(2.21)	<0.001	4.69 (2.22)	5.16 (2.26)	0.12

Table 5:10 Mean individual score, mean team score, and mean organisation score

5:6 Correlations between Individual, Team and Organisational Research Capacity Domains

Table 5:11, given in the next page, is the overall correlation between the capacities. As the correlation of organisational capacity and individual capacity is 0.42, then the correlation of individual capacity to organisational capacity is 0.42 too. This was done to examine whether any level of research capacity mediated the link between the other levels (Table 5:11). The p values of correlation between each level was <0.001 indicating that the correlation were statistically significant between each two levels. The same analysis was repeated for each hospital and are given in Tables 5:12 and 5:13 which shows that there was a correlation between each levels in both hospitals too (p<0.0001).

	Individual capacity	Team capacity
Individual capacity	-	-
Team capacity	.57*	-
Organisational capacity	.42*	.74*

*P<0.001

Table 5:11 Correlations between Individual, Team and Organisational Research Capacity Domains

City Hospital	Individual capacity	Team capacity
Individual capacity	-	-
Team capacity	.48*	-
Organisational capacity	.27*	.72*

*p<0.001

Table 5:12 City Hospital's correlations between Individual, Team and Organisational research capacity domains

Riverside Hospital	Individual capacity	Team capacity
Individual capacity	-	-
Team capacity	.62*	-
Organisational capacity	.56*	.697*

*p<0.0001

Table 5:13 Riverside Hospital's correlations between Individual, Team and Organisational research capacity domains

5.6 Barriers to a research culture

The barriers to a research culture were analysed for the two different hospitals. A range of answers were expected from the survey respondents as there was a list of options provided in the survey. Respondents were allowed to tick as many barriers as they wanted. Table 5:14 displayed the main barriers identified by the respondents.

Type of Barrier	n	City Hospital	Riverside Hospital
Time	159	100	59
Lack of suitable backfill	94	54	40
Other work roles take priority	158	102	56
Lack of funds for research	83	49	34
Lack of support from management	75	42	33
Lack access to equipment for research	62	33	29
Lack of administrative support	69	44	25
Lack of software for research	50	32	18
Isolation	30	19	11
Lack of library/internet access	10	4	6
Not interested in research	20	16	4
Other personal commitments	55	36	19
Desire for work / life balance	75	55	20
Lack of a co-ordinated approach to research	38	25	13
Lack of skills for research	76	46	30
Intimidated by research language	45	27	18

Table 5:14 Reported barriers for research

The 'n' for each barrier was the number of people indicating the barrier. The numbers represent the number of respondents for each barrier and are given in brackets in the descriptions below too.

The main barriers identified by the most respondents (n >50) in City Hospital Division of City Hospital were: time (n 100), lack of suitable back fill (n 54), other work roles taking priority (n 102), lack of desire in order to maintain a healthy Work and Life balance (n 55). The other important factors in City Hospital were lack of funds for research (n 49), lack of support from management (n 42), lack of administrative support (n 44) and lack of skills for research (n 46). The number of respondents, who identified the barriers at City Hospital, was higher compared to Riverside hospital. Important barriers for staff at Riverside hospital were time (n 59), Lack of suitable back fill (n 40) and, other work roles taking priority (n56). Other barriers included were lack of funds for research (n 34), lack of support from management (n33) and lack of skills for research (n 30).

Table 5:15 illustrates a summary of the number of reported barriers per person in the overall survey. There were a total of 17 barriers in the questionnaire and some respondents even listed 14 out of 17 barriers. That meant the interquartile range of reported barriers was 3-14 and the mean was 5.098.

Min	1st Qu.	Median	Mean	3rd Qu.	Max
0.000	3.000	4.000	5.098	7.000	17.000

Table 5:15 Summary of barriers reported per person

The interquartile range for the barriers reported at City Hospital was 3-7 with a mean of 4.944 and that of Riverside hospital was 3-7 with a mean of 5.375 (Table 5:16). The number of barriers identified by nurses was not statistically different from those of AHPs.

	Min	1st Quartile	Median	Mean	3rd Quartile	Max	Value
City	0.000	3.000	4.000	4.944	7.000	16.000	P=0.2
Riverside	0.000	3.000	5.000	5.375	7.000	17.000	
Nurse	0.000	3.000	4.000	5.006	7.000	16.000	P=0.07
AHP	1.000	4.000	5.000	5.613	7.000	17.000	

Table 5:16 summary of the number of barriers/ person for hospitals and profession

5.7   Motivations for research

Like as with barriers, a range of answers were expected from respondents as there was a list of motivators provided in the survey. Respondents were allowed to tick as many motivators as they wanted to tick. Table 5:17 displays the main motivators for respondents in performing research. The numbers represent the number of respondents for each motivator and are given in brackets here in descriptions too. The main motivators identified by both hospitals' and their number of respondents is given in brackets (as City Hospital being the first number and Riverside Hospital second number respectively). These were: develop skills (n 106, n 60), career advancement (n 88, n 47), increased job satisfaction (n 70, n 46), opportunities to improve patient care (n 91, n 64), and problem identified that needs changing (n 66, n 29), and increased credibility (n 51, n 30) and keep the brain stimulated (n50, n20).

Motivation	n	City Hospital	Riverside Hospital
Develop Skill	166	106	60
Career advancement	135	88	47
Increased job satisfaction	116	70	46
Study or research scholarships available	34	28	6
Dedicated time for research	53	36	17
Research written into role description	32	23	9
Colleagues doing research	27	22	5
Mentors available to supervise	44	29	15
Research encouraged by managers	43	30	13
Grant funds	35	27	8
Links to universities	43	28	15
Forms part of Post Graduate study	35	23	12
Opportunities to improve patient care	155	91	64
Problem identified that needs changing	95	66	29
Desire to prove a theory / hunch	66	47	19
To keep the brain stimulated	81	51	30
Credibility	70	50	20

Table 5:17 Motivators identified by the respondents

Table 5:18 illustrated the summary of motivators reported for Riverside Hospital and City Hospital. The mean for reported motivators at City Hospital was slightly higher (M 5.66) compared to Riverside Hospital (M 5.18).

	Min	1st Qu	Median	Mean	3rd Qu	Max	P value
Total	0.000	3.000	5.000	5.491	7.000	17.000	
City	0.000	3.000	5.000	5.66	8.000	16.000	P=0.29
Riverside	0.000	3.000	4.000	5.188	6.250	17.000	
Nurse	0.000	3.000	5.000	5.399	7.750	16.000	P=0.41
AHP	1.000	4.000	4.500	5.887	7.000	17.000	

Table 5:18 Summary of number of motivations per person for area and profession

The interquartile range for City Hospital was 3-8 whereas Riverside hospital was 3-6.25. The difference in the number of motivators identified by the nurses were statistically not significantly different between nurses and AHPs (p =0.41).

5.8   Current Research Activities

Table 5:19 illustrates the current research activities that individual respondents were involved in at both hospitals. The 'n' for each activity is the number of people involving that activity. It is noted from the results that City Hospital had more respondents who were involved in research activities compared to Riverside City Hospital where there was only very few activities. The less common research activity of City Hospital division was submitting an ethics application. Whereas in Riverside hospital the less involved research activities were collecting data, analysing qualitative data and submitting an ethics application.

Activity	N	City Hospital	Riverside Hospital
Submitting an ethics application	25	23	2
Collecting data (e.g., surveys, interviews)	16	15	1
Analysing qualitative research data	11	10	1
Analysing quantitative research data	61	46	15
Writing for publication in a peer-reviewed journal	22	16	6
Applying for research funding	23	20	3
No research activities	25	23	2
Submitting an ethics application	9	8	1
Collecting data research activities(e.g. Surveys, interviews)	142	81	61

Table 5:19 Reported Research Activities

5.9   Difference in research culture between Nurses and AHPs

The survey results indicated that overall there were no differences in the research culture between nurses and AHPs. The mean score for

nurses were 4.69 compared to 5.16 in AHPs (p = 0.12). When looking at each level, the mean individual score (nurses M 4.24 and AHPs M 4.54) and mean organisational scores (M 5.94 and M 5.92) were similar for both groups. The mean score for team level was slightly higher for AHPs (M 5.10) compared to nurses (M 4.51). However, none of these scores had any statistically significant difference between these professional groups at any level (Table 5:10). When looking at the differences in barriers and motivation between nurses and AHPs, these was not statistically significant (p=0.07 and p=0.41 for barriers and motivators respectively) (Tables 5:16 and 5:18). However, nurses reported more unsure answers compared to AHPs and there was a statistically significant difference in unsure answers between nurses (M 18.98) and AHPs (M 4.27)(p=0.0001) (Table 5:9).

5.10 Conclusion

The survey results indicated that there was a difference in the research culture between City Hospital and Riverside Hospital. There was a statistically significant difference in knowledge about BRC between City Hospital and Riverside Hospital. For the individual, team and organisational level capacity, there were statistically significant differences between City Hospital and Riverside Hospital. However, the mean scores for City Hospital at individual levels were not high enough to support a strong research culture. Furthermore, the team level scores at city hospital were also not high enough to indicate a very strong research culture at that level. Looking at the difference between nursing and AHP professions, the mean score for AHPs were higher on research culture compared to nurses. However these differences were not statistically significant. Also, overall there were more reported barriers, motivators and research activities at City Hospital compared to Riverside hospital. The next chapter will present the results from the qualitative part of this study.

6 Chapter 6: Qualitative Data Results

6.1 Introduction

The previous chapter examined the survey results from the phase 1 of this study and has identified the research culture at different levels of the organization including barriers and motivators of a research culture. Phases 2 and 3 of the study included focus groups of research active and research naive groups and one to one interviews with senior managers from both City Hospital and Riverside Hospital. The results of these two phases will contribute to the data triangulation as explained in the methodology chapter. This chapter is looking at and focusing on the results obtained from the analysis of the qualitative data. That is, this chapter is presenting the results of the focus group interviews from phase two and one to one interviews of senior managers from Phase 3. As explained in Chapter 4, Framework analysis was used to obtain the results presented in this chapter. The themes developed from the focus groups and one to one interviews were complimenting each other. Because of this reason and to follow triangulation, the results of both phases are summarised together in a single chapter. In order to maintain confidentiality and clarification, the participants in the focus group and one to one interviews were coded and identified as illustrated in Table 6:1. Also, in this table, the focus group participants who were Allied Health Professionals are marked as AHPs in brackets.

Interviewees	Number of participants	Representing
Research Naive group City Hospital	5	C1(AHP),C2,C3,C4
Research Naive Riverside hospital	4	B1,B2(AHP),B3(AHP), B4,B5
Research Active Multi professional research group	5	A1 (AHP), A2, A3, A4 (AHP), A5.
Senior Management team	5	R1,R2,R3,R4,R5

Table 6:1 Interview participants and groups

As in earlier chapters, in order to identify the areas used in this study, Table 6:2 is reproduced from the methodology chapter, so that it can be used as a guide to refer to when reviewing the results.

Area covered	Representation in the study
Research focused organisation	City Hospital
Largest research active division of the research focused organisation	Seacole Division.
Ward used for focus group discussion of the research focused organisation	Ward A
Non research focused organisation	Riverside Hospital
Ward used for focus group discussion in the non-research focused area	Ward B
Multi-disciplinary teams in both research focused and non-research focused organisation used for focus group discussion	Research Naive group
Multi professional research group	Research Active Group
Senior management team such as Chief Nurse of the research focused organisation, Head of Nursing for research active division of the research focused organisation and non-research focused organisation, Head of AHPs for research focused organisation,, Professor of Nursing and AHPs from the research focused organisation	Participant, 1, 2, 3, 4...etc. irrespective of the order and title.

Table 6:2 Areas, participants and their representation

The analysis of the interview data for all participants was done to identify the common themes affecting the research culture in an organisation at different levels. Complete data analysis was aimed at looking at the research culture irrespective of the interview group and participants. This process identified a number of important themes affecting the research culture at different levels (individual, team and organisational) and are explained below. Themes were generated from the data set by reviewing the matrix and making connections within and between participant and categories. During the interpretation stage of developing the themes, every effort was made

to provide a range of possible explanations for what was happening within the data. The themes developed were categorised as specific and generic. Specific themes were different to each three levels (individual, team and organisational) and generic themes were generic to all three levels. The first part of this section details the specific themes and their levels affected and then in later sections, the generic themes are described. These themes developed from the data analysis are described and summarised in Table 6:3. The quotes given throughout this chapter (6) are extracts from the interview transcripts. The respondents' pseudonyms and the page number of the transcripts are given in brackets. Any names mentioned in the actual quotes are replaced by letter 'x'. The quote which has 'Trust' in the lines indicates City Hospital.

Specific themes	Generic themes
- Lack of skills and knowledge at Individual level - Support at Team level - structures and facilities at Organisational level	- Barriers and enablers of research culture - Communication - Career pathways - External Links and Collaboration - Motivators

Table 6:3 Themes developed from the data analysis

6.2 Specific themes

This section explains the specific themes generated by the data analysis. As explained earlier, specific themes were specific to each level and they were: lack of skills and knowledge at Individual level, lack of support at team level and lack of infrastructure and facilities at organisational level.

6.2.1 Lack of skills and knowledge at Individual level

The interview participants, including the managers from both areas highlighted the lack of skills and knowledge about research at individual level for both areas. They believed that even with the research focus, it was hard to say that the staff at the individual level was empowered to do or talk about research or what they knew about research. They also pointed out that because of this lack of awareness, nurses and AHPs at the ward level may not ask patients to participate in research. Hence, patients could be missing their opportunity to get involved in research. It was believed by them that staff may not feel confident enough to answer any research related question about research participation raised by their patients. Also, participants acknowledged that they were not empowered to use the latest research evidence for patient care. This was the case for Riverside hospital too. Some of the focus group participants and managers indicated that individual staff at ground level were not research focused. The main reason they identified was their communication problem. They mentioned that communication was getting lost in the middle level.

> *"Certainly in my knowledge, junior staff is not yet empowered enough with support and resources to do or take part in research and may not provide opportunity for patients to take part. They may not have enough information too as it doesn't reach juniors and get stuck or lost somewhere in the middle"* (R6:7)

Another participant commented the following:

> *"We don't use the latest evidences in our practice because we are not aware of any recent studies or evidences."* (C3:10)

As detailed later on in the organisational structure and facilities theme, focus group participants and managers supported the point that there were more resources evident at the top organisational level

for City Hospital. However; this support was not evident at individual level and this was not different in Riverside Hospital.

> *"City Hospital is very supportive of research at a senior level and put lots of structure in place to assist research, but on the ground, it's hard to find this support.* "(R 1:3)

6.2.2 Lack of Support at Team level

Lack of support and adequate infra-structure and resources at the middle level (team level) was emphasised by a majority of City Hospital participants. Riverside hospital participants felt that they did not have any support from any level of the organization. From the background discussion in chapter 2, it was evident that promoting research was an organisational core value at City Hospital. Also, support from senior managers and the team at the middle level was highlighted by Golenko et al. 2012 as crucial. They suggested that this support can be demonstrated through establishing structures, processes and systems to facilitate research available at the middle level. Senior managers from City Hospital also supported this by saying that,

> *"I think it depends upon the senior leadership within nursing and actually whether they see that as beneficial and a priority because I think actually without that drive at a senior level, so I'm, kind of, thinking head of nursing, lead nurse, matron level, unless it's actually on that agenda for that staff group, then it won't get taken forward at all."* (R3:6)

This comment by R3 mirrors City participants' comments (R1: 3) reported in section 6.2.1, which may indicate that the research approved by the middle management gets more support. Tanner and Hale (2002) also suggested that support from managers was seen as influential and their facilitation was the most important factor to aid research. Focus group participants and managers felt that though

this support was influential, it was not evident to be seen by staff due to the other barriers such as time, clinical pressure etc. This is discussed later in the generic theme section.

> *"And the AHPs I think managers and leaders, and the like, are supportive in general, but they can only support what they can support due to other priorities"* (C1:12)

Some participant comments highlighting the concerns on team level support are also given here.

> *"I think it's high level Trust who are seen to be doing all this research stuff with support and funding but I think when it comes down to our level, it's getting lost somewhere in the middle and there is no evident support from the team level due to the commitments or time."* (A3:18)

Another participant commented that it was the finance and time pressure from the middle level affecting the research culture.

> *"Well the lack of support I think comes from the pressures the immediate team are feeling and the lack of money and resources evident from the team level are also evident"* (B3: 12)

Probst et al. (2014) and McCance et al. (2007) suggested that a strong leadership and management will help to motivate others and would enhance a positive research culture and improve research capacity. Smith (1997) and Jowett et al. (2000) have recognized that capacity development can be focused at a team level. Some senior managers and focus group participants from both hospitals signposted that the need for middle level support was very important in maintaining a research culture. They also pointed out that the research needs to be in on the agenda for middle level managers. There needs to increase in staff awareness on research. Also, it was

identified that there was a gap in support between all three levels. They suggested that a top to bottom and bottom to top approach is needed to close this gap.

> "*I think that there has been some increased awareness. It certainly gets talked about but of course people change and you might have one manager who is very supportive and then they leave and take on a new post. And the new manager might not be so supportive or it can happen the either way.*" (R2:6)

Another participant pointed out about the gap in communication and support issues at middle level

> "*…think there is a gap, I think that the middle manager level, most probably of communication and support because there's been less exposure around for ward managers, for matrons who are, you know, they are the ones in the firing line, you know, the day-to-day jobs and getting it done… maybe they have a less strategic view or long range view*". (R3:7)

On the other hand, participant R5 pointed out the clinical pressures at middle level.

> "*Well, I mean, it's a real issue and I think that, where there's support at the top… but it's the line managers in the middle that are getting the squeeze. There may be support, yes we want to support people doing this but they've got to deliver this clinical service, and so I think it's, that it has to go both top down and bottom up.*"(R5:27)

6.2.3 Organisational level: infrastructures and facilities

Participants from City Hospital focus groups identified that organisational changes starting from the establishment of BRC and introduction of research strategies helped in strengthening the

research culture of the organisation. Participants also emphasised that there were more resources at the organisation level due to BRC, networks and research and innovation division. They also identified that there were a noticeable increase in research staff, published studies and successful funding. Riverside hospital participants believed that having more research infrastructures would aid in research culture.

"Having a BRC has helped to improve the research support and staffing available within the organisation. Certainly, the numbers of research staff and research studies have gone up. I have also noticed more funding calls to do more research projects, both internally and externally".(A 2:4)

This reflected the findings of Cooke (2008), Trostle (1992), and Bates et al. (2006) by suggesting that the aims of the research focus in an organisation are to improve the ability to conduct, use and promote research. This was done through providing training, funding, infrastructure, linkages and career pathways and hence to improve research productivity. The importance of an environment or infrastructure that supports research was recognised in the literature (Blakeman et al.2001; Stineman and Kennedy 2005). This suggests that an organisation should have an environment that supports research culture, by having more opportunities, resources training, and support. Many participants and managers of City Hospital also suggested the same.

"There are changes in the resources, structure and functions of BRC and R&I division and more interest in research studies and research related activities at the top level, but not at our level."(A1:5)

However, Riverside hospital staff suggested the lack of support and funding available in their setting was an issue. The majority of them

did not know that there was any research happening in Riverside hospital or that there was any mechanisms in existence to support research. They also indicated that even if there was research happening at Riverside Hospital, there was no communication measures to reach the bottom level.

> *"….it's about funding for research and funding for backfilling the member as well and there wasn't really the support for us in terms of the research process, I didn't have any idea what was going on and still don't know what happened."*(B3:4)

Cooke (2008) suggested to employment of professors in an organisation who are leaders in their fields. They help to promote a research-based culture in clinical practice and engagement in research activity, as well as to support dissemination and provide research leadership. As explained earlier, City Hospital had a Professor of Nursing and AHPs to promote research for this group and their support was highlighted by the participants. Whereas in Riverside hospital, there was not that level of support. Below is an example of how City hospital saw the role of a Professor of Nursing and AHP as supportive for research.

> *"I think I would argue that my own position and 'x' as professor of nursing, is an indication of a high level management support within the trust that other trusts don't have. We identify people with an interest about what our research ideas might be and then how we go about it and supporting the staff in doing that."*(A5, p10)

This was supported again in the literature by Joffres et al. (2004) that the leadership stimulates capacity building, along with congruence of organizational objectives, and organizational readiness to change. There were also some RCD literature suggested that having a

research director within an organisation makes it more research productive and active (Cooke et al. 2006).

6.3   Generic Themes (individual, team and organisational)

In this section, the generic themes derived from the data analysis are discussed. The themes were 'barriers and enablers', 'communication', 'career pathways', 'external links' 'collaboration and motivators'. Though communication, career pathways, external links and collaboration and motivators can be grouped under barriers and enablers, they are considered as different themes here as each of those themes were prominent in the discussions as individual themes.

6.3.1   Barriers and enablers of research culture

There were a number of internal and external factors perceived as barriers and enablers in facilitating the research culture of the organisation at different levels. These were mainly relationships with other organisations, work load pressure, staff shortages, lack of involvement from managers and peer and manager pressure. Almost all of the participants and managers listed the majority of these barriers. According to the literature review, barriers included organisational issues, such as a lack of research management, lack of support, and lack of knowledge about undertaking research (Clifford and Murray 2001, Happell 2008). Other barriers perceived by nurses and AHPs were staffing, finances and managerial support as outside of their control (Clifford and Murray 2001).

> *"The central conflict in all of this is the clash between delivering the service. The NHS has been asked to come up with a lot of cost savings and so they don't want to hire more staff."* (A5:16)

However, Ried et al. (2007) identified some significant barriers such as lack of time; limited financial support and lack of access to experts are significant barriers to future research activity. Previous studies have revealed barriers within the clinical area such as nurses' low level of knowledge and skills are because of lack of time to engage in research (Cooke and Green 2000). This was echoed by the majority of the focus group participants and managers. Some even illustrated that they even struggle to finish their clinical care due to lack of time, staffing and clinical pressure. This was evident in the literature too. Ball et al. (2014) highlighted that due to lack of time, even care activity had been left undone on their last shift.

> *"It's mostly time. The people who are in clinical roles, depending on what type of clinical role they have, it's not always easy for them to get away for a couple of hours".* (C2:12)

Managers and focus group participants from City Hospital felt that though there was more organisational funding for research, there was a lack of enough funding to carry out actual research projects or develop research skills for nurses and AHPs. Similarly, the same issues were mentioned by Riverside Hospital participants too. Both groups suggested communication as a main reason for this. The influence of communication will be discussed in the next section.

> *"There is not enough funding focused on nursing and AHP research"* (A 6:9)

One manager indicated that providing adequate time for everyone may not even happen.

> *"Well, you know, you can always say that there is never going to be enough support because what it would be ideal is if we could give everyone who has done a research degree, you*

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know 20% of their time or something to develop their ideas, to develop themselves, to get linked in with other research groups and start to do research, or be engaged in that. And that's not something that is going to happen". (R 2:16).

Funding was another issue raised by the participants during discussions. Participant B4 from Riverside Hospital indicated the lack of funding and the lack of knowledge on research.

"It's about funding for research and funding for backfilling the clinicians as well and there wasn't really the support for us in terms of the research process, I didn't have any idea what was going on and still don't know what happened." (B4:6)

These factors discussed above could be seen as enablers such as providing time, support and management, collaboration, access to funding and experts and reducing clinical pressures at all levels(individual, team and organisational). Like barriers, managers and focus group participants identified enablers as a theme.

"I think we need to give people time. We need to build capability of people. You want people to be researchers to improve practice, which then impacts on patient care and the quality and experience, but also we need people delivering direct care at the bedside. So we probably don't put enough resource in."(R4:7)

These findings are in line with the current available literature and could contribute to empirical evidence to support the evidences and concepts developed and proposed in the similar field (Cooke 2005, Farmer and Weston 2002) which promoted a whole system approach, encouraging networking and collaboration.

6.3.2 Communication

Communication was an important theme which emerged from the interviews and discussions affecting all three levels of research culture. As mentioned in chapter 2, communication was one of the twelve identified organisational factors proposed by Bland and Ruffin (1992) affecting research productivity and culture. However, this study indicated that the communication is a factor that affects all three levels (individual, team and organisation) and not only the organisational level. The interviewees pointed out that there was a gap in the communication between organisational, team and individual level. The focus group participants and managers from both areas believed that lack of communication was an important barrier and improving communication between each level was an enabler for research culture. Also communication was an important means for creating links between each level. One example which arose from the discussions was the lack of communication and lack of awareness of research strategies among City Hospital staff. The majority of the focus group participants did not know or even hear about the research strategies which existed in City Hospital until this study took place.

> *"At present, we are missing out from research information as we are on the ground level and this needs to be tackled. I only hear about strategies now and I bet everyone in the top-level know about this and not us"* (C3:11).

One participant pointed out clearly that they do not hear anything about research due to communication problems.

> *"We don't hear anything about research here that could be particularly a communication problem* (B4:7)

Both groups and even managers suggested that measures should be taken to improve communication between top (organisational) and

bottom (individual) levels. These can be done by having a research link worker in each clinical area for research and having research as a standing agenda in team and staff meetings. It would bring up discussions about research amongst staff and staff opportunities to talk about and understand ongoing research.

> *"we should actually have presence of research in our professional bodies, professional meetings, heads of nursing meetings, ward managers' meetings etc., it should be a standard agenda item which would bring up discussions about research and current evidences"* (R1:15)

The participants and some of the managers also suggested including research related topics in hospital inductions, corporate mandatory trainings, job descriptions, interviews and appraisals.

> *"Adding one or two sentences about research in job descriptions or adding a question about research in interviews would be helpful"* (R4:10)

They also indicated that the orientation of new staff to research or the introduction of new staff to research was important to develop the culture.

> *"The culture and awareness may increase if research is built into the Trust training programmes such as induction or corporate mandatory."* (R4:5)

Some of them said that the research was for those who have research mentioned in their job description.

> *"In my opinion, research is for those who have research mentioned in their job description".* (C5:25)

Participants also identified the adoption of a whole level approach (linking between individual, team and organisation) where the organisation can assist in strengthening research culture as illustrated in Cooke's Framework (Cooke's 2005).

> " We need to have a linked approach between each layers or levels, I mean individual, division and Trust and communication is an important factor to achieve this"(R4:16)

6.3.3 Career pathways

There were concerns raised by the focus group participants and managers in City Hospital about the lack of proper career pathways in research and hence lack of utilisation of the skills acquired. They also mentioned that support for research should not be restricted by or limited to these research specific positions and suggested that research support needs to be extended to other professionals who are interested in research and linking them throughout the organisation.

> "In this hospital, research is medic oriented, as a major teaching hospital, it's assumed that everybody…by people outside, that everybody is involved in research and is doing research one way or another. I don't think that's the case, even in a teaching hospital and it's not the case with nursing midwifery and AHP staff either." (R2:13)

Clark (2014) supported this by noting that there is an embedded culture in medicine which acknowledges that clinical academics and clinical academic leaders are essential to a vision of evidence based medical practice and a prominent research culture. However this was not evident in nursing or in the allied health professions and the focus group participants from both hospitals also emphasised the same.

> *"I think if we compare ourselves to medicine, in terms of what happens in medicine, you sort of, you do SPR*[1] to your foundation, SPR your clinical. It is so much easier, in inverted comas, I would imagine, getting into that research. Whereas nursing, certainly AHP, it's a very different world, you know, if you do, do doctorate or whatever you're then kind of stuck then aren't you? There is this enormous gap between…unless you actually have a university post what do you do then?"* (C1:17)

Latter et al. (2009) also emphasised the need for creating a clinical academic career framework for nurses, midwives and allied health professionals who wish to combine clinical and academic roles. As mentioned in Chapter 2, the NIHR has introduced career pathways for nurses and AHPs which included a Master's programme (Research Methods) followed by doctoral, post-doctoral and senior clinical lectureship awards (NIHR 2015c). City Hospital focus group believed that even though the programme existed and there were staff currently joined in this pathway; City Hospital was not equipped for their career progression. Furthermore, there were no opportunities for them in real life after completing their studies. City Hospital participants also indicated that even people who completed masters and PhDs had left the hospital. This was evidenced by them saying the names of the people who have left the hospital after completing their PhD in 2013. They believed that these staff left City Hospital due to lack of opportunities for career progression.

> *"There's no career progression if you want to stay clinical and do research at the moment, you get stuck here and I don't want to go into management, but that's the career path, it's set*

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[1] SPR: A Specialist Registrar or Sp R is a doctor in the Republic of Ireland and formerly in the United Kingdom who is receiving advanced training in a specialist field of medicine in order eventually to become a consultant.(Wikipedia 2015)

for people who want to go down that path, but not set for people who are doing research and we're a teaching hospital. Even people with PhD from here have left the place. So, we've got it wrong somewhere, but that's what I would like to see change."(A2:28)

They also highlighted that there was no encouragement or support from the hospital for the publication or dissemination of the results of their studies.

"There was no support or encouragement whatsoever to spread or publicise the results at the forums or meeting" (A3:19).

However managers thought that the reason for the staff with Masters and PhDs leaving was due to the lack of understanding from their immediate managers, on what to expect from these staff. In order to change these, senior managers (interviewee) suggested that there needs to be some education for the managers to know what was expected from them. However, the managers at the interview did indicate that City Hospital still had not got that level of expertise to meet this need.

"You get a PhD, so what's going to be different when you get back into your job? You're coming back into the same job. It's a re-education. You've got people with new skills and knowledge – how can we use those to the benefit of the Trust as well as to their own individual growth. And we don't have that kind of, we're not ready to do that and that's kind of the work that has to go on. Your manager may not know what can I expect differently from you now that she has got a PhD or how do you make your job different, so it's for the same way that people come back in, and they're coming back into their

same clinical role but they've got new skills that we're not utilising."(R5:22*)*

It was also noted from the discussions that AHPs were more research active than nurses and they tended to collaborate more with medical staff depending on the nature of the project. Even the participants from Riverside hospital came up with this conclusion that AHPs were seen to be more research active than nurses generally. Some indicated that the reason for this was the AHPs personal motivation. Because masters was desirable for AHPs' career progression.

"It's ideal to have masters if you are looking for a Career progression as an AHP" (A3:23)

However, the literature suggests that the AHPs did not consider themselves as research active and they rated themselves as having little research experience, but had higher levels of interest than experience in research tasks (Ried et al. 2006, Stephens et al. 2009).

6.3.4   External links and collaboration

The literature suggested that a research culture involving partnerships and collaborations can provide access to more funding, resources and infrastructure. Golenko et al. (2012) pointed out that partnerships through co-joint positions can provide access to experienced researchers, research expertise, research skills training and opportunities to apply research skills. However, both the focus group participants and the managers felt that these partnerships were not being encouraged enough in the current culture of nurses and AHPs. A research culture with collaboration and jointly funded positions are needed to encourage continuous movement of clinical and research practitioners and academics between clinical and theoretical areas of work and encourage postgraduate education

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which is important in gaining recognition amongst the wider health care sectors (Pickstone et al.2008, HEFCE 2001, Perry et al.2008). Many participants discussed that having a stronger link within the organisation at different levels and collaborating with external agencies and organisations might assist in raising the research culture. They also suggested collaborating more with organisations such as networks, universities and Academic Health Science Centres also aid in improving research culture. Participants believed that there needed to be stronger external partnerships, through strong communication, with other organisations, in particular Universities.

> *"It will be ideal to partner up with university to do more research and putting research proposals. But I don't know whether we do enough of that and whether we have enough external links or whether we don't hear about it" (R3:19)*

Participants believed that the communication, collaborations and links with universities and networks could assist in providing nurses and AHPs with access to experienced researchers, research skills training and opportunities to apply research skills. They also could help in providing access to infrastructure and resources such as libraries and computer software, and access to funding.

> *"By doing a joint research project with the University, we get access to their equipment and we get the research we want to be done." (A3:16)*

City Hospital focus group participants discussed the national changes on research from the Department of Health nationally and availability of the BRC funding supporting research culture. For example, the staff thought that there were some new opportunities for nurses and AHPs to develop research skills through Masters Programmes and workforce development programs.

"I think some of the new funding arrangements have made a difference. I think our relationship with the university has made a difference I think, nationally and internationally, research is becoming more recognised as being necessary rather than a luxury that some people do because they have an interest. I think we've seen a cultural shift in the expectations of research. But we need to have and would like to see more of it as it's not much in our level" (R1:23)

However, when interrogating City Hospital data, there were clinically split posts between City Hospital and the University, which started in 2012 and there were already 2 nurses in these posts. These posts were named as clinical fellows. Fifty per cent of their time was spent in university and 50% in City hospital. However the focus group participants were unaware of these posts.

6.3.5 Motivators of research culture

Another generic theme which came out from the qualitative data analysis was the motivators for research culture. Barriers and enablers were discussed as a theme earlier as they were interlinked to each other. It was acknowledged that the motivators could be considered as enablers. However, in this study, the majority of the motivators identified were personally driven and hence these were grouped in a different theme. It was identified in the literature that there were many motivators for improving research culture such as ability to develop skills, increase job satisfaction, career advancement and identifying problems that needed changing (Lazzarini 2008, Cooke et al. 2008, and Pager et al. 2012). Also, another motivator, pointed out by the participants, was to address unidentified clinical problems (Pager et al. 2012). Apart from these, the discussion with the focus group participants from both areas identified the opportunity to improve patient care as an important motivator which was also listed in the RCC tool.

"I think, personally, you see things in practice and you think, you want to make a difference, you then get motivated, you try to think about it from a research point of view to improve patient care" (A2:32)

However, the managers thought that the main motivator for a research culture was personally driven and this could be due to a desire to increase knowledge, job satisfaction or career progression.

"There's a personal driver around research and that's why I don't think you can say to everybody, you must all be researchers. Just like you can't say, you must all be teachers. Everybody can do it, you can teach people to do it, but it won't be a natural asset for them. I think the real fundamental issue around research is the desire, the personal level of curiosity and inquisition to want to understand why or why not something happens and then you can improve things on the basis of objectively testing it." (R1:4)

6.4 Conclusion

The results of the qualitative part of this study identified the main themes which were divided into specific and generic levels. The specific themes were lack of skills and knowledge at individual level, support at team level and structures and facilities at organisational level. The generic themes identified from the analysis were barriers and enablers of research culture, communication, career pathways, external links and collaboration and motivators. The themes developed from the discussions were mainly on both internal and external factors affecting research culture at different levels. The majority of these findings are in line with current literature (Cook 2005, Holden et al. 2012b) and provide empirical evidence to support the theories and concepts proposed by other researchers in the field. However, issues in communication at all levels and the wide gap in

support at the middle level were highlighted more from this study compared to previous literature. Also, the participants suggested that there was more research culture evident in AHPs compared to nurses. So the new knowledge derived from this study is that there is a wide gap in communication between different levels of individual, team and organisation. Also this study highlights that there is a gap in research culture at middle level and that needs to be tackled to improve the research culture of healthcare organisations.

7   CHAPTER 7: DISCUSSION AND CONCLUSION

7.1   Introduction

The previous chapter presented the results of the qualitative data analysis of this study. This final chapter includes the discussion section which gives an opportunity to explain the importance of the quantitative and qualitative results of this study, and summarise and conclude them. The aims and objectives of this study are explained again here for concluding the results.

7.1.1 Aim

The primary aim of the research study was to explore the influence of research focused exposure on the research culture of nurses and AHPs in the UK and to identify if there was a difference in the research culture between a research focused and non-research focused clinical area.

7.1.2 Objectives

- To assess the research culture of nurses and AHPs at individual, team and organisation levels in a research focused and a non-research focused area using a validated research culture and capacity tool.
- To provide baseline understanding of the research culture of nurses and AHP in a research focused and a non-research focused hospital.
- To undertake focus group discussions with research active and research naive groups to provide contextualisation of the study results.
- To explore the views of senior managers about the research culture using semi-structured interviews
- To identify the barriers and motivators for research culture

As explained in the methodology chapter, the study had three phases. Phase one included the use of the Research Capacity and Culture (RCC) tool survey of participants from City Hospital (Research focused area) and Riverside hospital. Phase 2 included the focus group interviews and phase 3 was the one to one interviews of senior managers.

In this concluding chapter, the results presented in Chapters 5 and 6 are discussed and debated, including the identification of this study's unique contribution to the existing knowledge domain on research culture. The chapter concentrated on triangulating the quantitative and qualitative results and then conclusions were made to identify the key findings of the study. In order to identify the hospital areas used in this study, the same table (Table 7:1) from the methodology chapter has been reproduced here as an aide memoir, so that it could be used as a guide to refer to when reading the chapters. After looking at the demographic details, the chapter started with summarising the results of research culture at different levels, namely the Individual, team and organisational levels.

Area covered	Representation in the study
Research focused organisation	City Hospital
Largest research active division of the research focused organisation	Seacole Division
Ward used for focus group discussion of the research focused organisation	Ward A
Non research focused organisation	Riverside Hospital
Ward used for focus group discussion in the non-research focused area	Ward B
Multi-disciplinary teams in both research focused and non-research focused organisation used for focus group discussion	Research Naive group
Multi professional research group	Research Active group
Senior management team such Chief Nurse of the research focused organisation, Head of Nursing for research active division of the research focused organisation and non-research focused organisation, Head of AHPs for Research focused organisation,, Professor of Nursing and AHPs, research focused organisation	Participant, 1, 2, 3, 4 etc. irrespective of the order and title.

Table 7:1 List and names of areas and participants and their representation

The total number of responses received for this survey was 224 giving a response rate of 24%. Even though this response rate was low, this is similar to the response rate of 24% from a previous survey done in City Hospital as explained in Chapter 3. It is important to acknowledge that 24% is a better response rate than has been seen in these types of surveys, where for example there was only a 6% response rate in Lazzarini's (2015) study using the RCC.

There were a higher number of female participants in the Seacole Division 87.5% compared to 85 %in Riverside Hospital from the total respondents for each division. Male respondents were 12.5% (n=18) and 15 % (n=12) respectively for each hospital. Therefore there were more female respondents compared to male respondents in both hospitals. The difference in this can probably be explained by the difference in the total numbers of male and female healthcare professionals nationally, as there always is a preponderance of female healthcare professionals in hospitals. As per the Health and Social Care Information Centre (2014) data on gender demographics, there were 81% of female health care professionals compared to 19% male professionals. Also, more nurses responded to the survey compared to AHPs in both areas (71.8 % nurses and 28.2% AHPs). The national census data (2014/) showed that there are more nurses (356,850) compared to AHPs (156,723). More post graduates responded to the survey compared to other qualified groups from both areas 35.4 % (n=51) in Seacole division and 43% (n=34) in Riverside Hospital. Furthermore, there was a statistically significant difference in the aggregated score of qualification of City Hospital participants compared to Riverside Hospital (p=0.03). This indicated that the respondents from City Hospital had higher qualifications compared to Riverside Hospital.

7.2 Research culture at different levels

This study has attempted to measure and compare the research culture of nurses and AHPs in a research focused and non-research focused clinical area using a mixed methodology of which this was a novel approach to the topic. This study was the first one to use a mixed methodology, combining quantitative (survey) and qualitative (focus groups and interviews) to understand research culture. In order to present the results succinctly, the structural levels and RCB principles from Cooke's (2005) framework, as described in chapter 3, have been used. Cooke's framework was the most appropriate one to use in this study because this was developed to measure RCB. Though Cooke's framework was focused on measuring RCB, the RCC tool developed was based on Cooke's framework to measure research culture and hence was used in this study too. The framework identified four structural levels of research capacity development activities in an organisation. These are individual, team, organisational and supra-organisational. Cooke's (2005) framework suggested that one level of activity (or in this study, the culture) could have an impact at another level and could potentially have a synergetic or detrimental effect on the other.
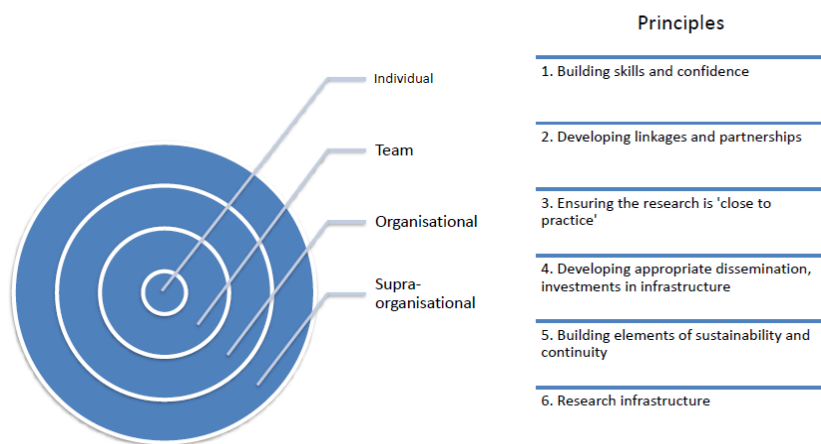
Figure 7:1Cooke's Framework Principles

Also to discuss the conclusion, the results are mapped into Cooke's framework on capacity building which were already explained Chapter 2; and are again repeated here (Figure 7:1). There are six principles in this framework which are:

- building skills and confidence,
- developing linkages and partnerships,
- ensuring the research is 'close to practice',
- developing appropriate dissemination,
- investments in infrastructure,
- building elements of sustainability and continuity.

These principles are written in the discussion in bold and italic letters to highlight the framework.

7.2.1 Individual level

Both the survey results and the framework analysis of the interviews suggested that the research culture at individual level was not adequate enough in City Hospital. However, there was a statistically significant difference in the education of City Hospital staff compared with Riverside (p 0.03), which may reflect the statistically significant cultural difference at individual level too (p 0.003). This indicated that the individuals were lacking adequate skills to undertake the majority of the aspects of research at their level. The mean score of individual skill for City Hospital was 4.6 compared to 3.87 for Riverside Hospital and had a p value of 0.003. The results given by the Framework analysis of the interviews was also along the same line in which the focus group participants and managers from both areas identified a lack of research skills at individual level. However, both the survey results and interview results pointed out that these skills were higher at City Hospital compared to Riverside hospital. There was a higher mean score for all the respondents' perceived research skills at individual level in City Hospital (4.6) compared with that of Riverside

Hospital (3.87) which would be expected due to the research exposure at City Hospital. Overall, the skills reported by City Hospital respondents were higher in all research activities that are considered important in the initiation of a research project. These activities included 'having the skills to secure research funding',' submit an ethics application', 'provide advice to less experienced researchers', 'a trend in increased skill levels to write a research report', 'performing the writing of more research protocols'. Also, there were higher scores in skills to initiate research were perceived, with regards to team and organisational skills and support at City Hospital. Also, there were high score for items such as 'organisation providing adequate research training', 'infrastructure', 'expertise, planning, and mechanisms to monitor quality research'. The mean scores for each of these skills in Riverside Hospital were less than City Hospital.

At individual level, items such as 'writing a research protocol', 'securing research funding' , 'analysing qualitative research data', 'writing for publication in peer-reviewed journals', 'providing advice to less experienced researchers' had no statistical difference between City and Riverside Hospitals (p >0.05). However, for the rest of the items at individual level, the p values were <0.05. These results were consistent with the findings of Stephens et al. (2009) and Howard et al. (2013) who also showed that scores for higher level research activities like securing funding or co-authoring a paper for publication, were low compared to other skills in AHPs. This study's findings also suggested that there should be extra support, commitment and resources needed to fulfil these tasks by the individuals.

Based on the literature and policy documents, it could be argued that a research focused organisation may have enough support and infrastructure to improve the research culture of individuals. This would have normally been achieved by developing appropriate skills and confidence, through training and creating opportunities to apply

skills. Moreover, it was highlighted in the literature that there was a need to develop research skills at individual level (DOH 1999, DOH 2000b). Also, Cooke (2005) highlighted that an individuals' skills and abilities to conduct research may be influenced by their organisational culture (Cooke 2005). The previously mentioned study by Williams and Lazzarini (2015) also suggested that the organisation has a role in research culture and suggested that those working in multi-practitioner workplaces reported higher individual success or skills in the majority of items compared with sole practitioners ($p < 0.05$). From chapter 2, it was clear that the research focused area in this study had more research infrastructure, including BRC, and there were efforts at organisational level to improve the research skills of the staff. However, this study results indicated that these efforts were not adequate enough to develop '*the skills and confidence*' of staff at individual level which was one of the six principles of Cooke's framework, as the mean score for the individual level research skills for City Hospital was M<5(4.6). It was also interesting to note that City Hospital and Riverside hospital had fairly consistent findings even though one had investment and the other one did not have any investment. This might also raise other concerns around the cost effectiveness and cost implications of this investment in research in City Hospital as, being big investment with poor returns.

Cooke (2005) suggested that developing a 'research culture' within organisations indicates a *'closeness to practice'*. This in turn affects the ability of teams and individuals to perform research. Analysing the results of this study, even in the research focused organisation, the ability of individuals and teams to do research or closeness to practise was not adequate enough due to the barriers. When reviewing the literature on assessing the research skills for health professional, investigators have largely focused on identifying barriers, attitudes and predictors of involvement in research among health care professionals (Wylie-Rosette et al. 1990, Funk et al.1991,

Manor and Myer 2003, Pager et al. 2012). The major barriers identified in the literature included: lack of support and time, other work priorities, limited skill in research, as well as limited resources and infrastructure to do research activities (Albert & Mickan, 2003; Byham-Gray et al., 2006; and Pager et al. 2012). Even though there are efforts taken to improve the research focus and capacity, it was interesting to note that none of these barriers have changed though it was reported in the literature a long time back.

Though this study had identified the barriers discussed in the literature, it also raised novel findings in barriers such as lack of communication at all levels and lack of support at the middle level. As explained in results section of Chapter 5, the survey included a list of barriers and the main barriers (respondent's numbers in the brackets) identified by the Seacole division were time (n100), lack of suitable back fill (n54), and other work roles taking priority (n102), lack of desire in order to maintain a healthy work and life balance (n55). The other important factors in the Seacole division were lack of funds for research (n49), lack of support from management (n42), lack of administrative support (n44) and lack of skills for research (n46). However, the number of barriers identified by City Hospital was higher compared to Riverside hospital. This might be due to the fact that for Riverside Hospital survey participants, it would have been harder to identify the barriers without being involved or knowing about research. Another reason could be the respondent bias as the participant with research interest might respond compared to others. This means, participants already interested in research might have responded to the surveys and those who are not interested in research may not have responded. This might have caused a slight over inflation of the level of the research interest too.

Like barriers, the motivators of research culture were also identified by this study. A range of answers for motivators were given by the survey participants and interviewees in both hospitals. However, like

the barriers there were more motivators listed by City Hospital staff and the main motivators identified were career advancement, increased job satisfaction, study or research scholarships available, problem identified that needs changing, and increased credibility, and career advancement. Research motivators reported in this thesis also closely mirrored those found in the literature such as ability to develop skills, increase job satisfaction, career advancement and identifying problems that need changing (Lazzarini 2008, Cook et al.2008, and Pager et al.2012). However, it was interesting to note from this study that staff from both areas identified the opportunity to improve patient care and address identified clinical problems as two important motivators for research. Furthermore, there were no other studies in the literature doing this comparison of nurses and AHPs in a clinical setting. This suggested that nurses and AHPs are very keen to improve patient care and to do research on identified clinical needs to improve the quality of care and outcomes for patients. This was emphasised by McMahon and Lacey (2010) and Gerrish and Lathleen (2015). They highlighted that nursing and healthcare research should contribute to knowledge. It was also suggested that they should also address questions on improving health and well-being of patients and public and lead to improvement in patient care.

In this study, the managers believed that the main motivator for the individual should be personally driven. As explained by Reid et al (2004), for an individual to be personally motivated and driven to achieve something then there needed to be some incentive to aim for such as career progression or change of roles etc. Though increased job satisfaction and career advancement were clearly indicated motivators behind research culture, it was clear from the discussions that lack of career progression was an issue for most nurses and AHPs. This was articulated by City Hospital participants and managers. There was some emphasis from them that medical staff were research cultured profession as highlighted by Clark (2014) and the nurses and AHPs do not have the same culture.

Even though the NIHR has introduced career pathways for nurses and AHPs, post Finch Report (2013), which included an internship, master's programme (Research Methods) followed by doctoral, post-doctoral and senior clinical lectureship awards (NIHR 2015c), there were not enough opportunities provided even in City Hospital to accommodate these nurses or AHPs who have completed these. Also, there were three interns selected in this year (2014) round at City Hospital. As a result, as this study suggested, some of the staff left the hospital due to lack of career progression. Therefore, the return of investment on the research focus and capacity building became too little. However, McMahon (2000) acknowledged that in order to obtain the best return on investment in Research Capacity Building, nurses who develop research skills should be given the opportunity to do so by providing a clear career pathway which integrates clinical and academic perspectives. This correlates to the principle of **'sustainability of skills'** as mentioned in Cooke's Framework (Cooke 2005). Sustaining highly skilled people in the organisation aids the promotion of better patient care, and the motivation of staff. Organisational policies and structures should support the career progression of its staff. This should provide opportunities to apply skills and also empowers the 'sustainability of skills'' (Cooke 2005, DOH 2000b, and Sarre 2002). Research awareness also should be cultivated during undergraduate training of nurses and AHPs. Since 2013, nursing have become a graduate profession with some research component. Also, in November 2014, the NIHR Faculty, in partnership with the national Workforce Development team, held its first seminar with Higher Education colleagues to ensure that clinical research competence is embedded in the undergraduate curriculum of the future (NIHR 2014). The HEE business plan (2014-2015) also highlighted that research and innovation should be embedded in career information for all health care groups, so that they have the skills, capabilities and insights

needed to lead and implement research and innovation for evidence-based practice leading to research based patient care (HEE 2015b).

Later on the 'spoke placement' for nursing students was suggested as a step to research. Naylor et al (2015) suggested that it is easy to set up research as a 'spoke' placement and this would encourage more students to observe research where they could get involved in research activities. This also helps to understand research processes and obtain valuable skills which could be transferred to other clinical or professional areas. However, there were still work undergoing on this agenda of clinical placement in research (O'Neill 2015). This work would also help to follow the policy drivers such as NHS Constitution (DOH 2013a) and the Health and Social Care Act (DOH 2012b); which suggested that the NHS in England had a statutory responsibility to promote health and social care through research. These changes may influence the awareness and attitude of nurses towards research.

Snelgrove and James (2011) looked at the perception of graduate nurses on research and development culture in one of the healthcare Trust in the UK. It was found that participants who wished to conduct research were still hindered by the organisational barriers and culture. Another important finding of that study was that the lack of use of these research skills and knowledge resulted in deskilling themselves and losing their confidence from research. This thesis also highlighted these issues, though it included both graduate and non- graduate nurses. However, as nursing is a graduate profession now, the issues on lack of experience, organisational culture and keeping up with the skills may still be an outstanding issue. The introduction of internship programme in the Clinical Academic Carrier Pathway may help to resolve this.

Kim (2009) pointed out that clinical academic careers in the UK were considered an important landmark in nursing research education and practice. The Clinical Academic Career pathway was attentive mainly

on research leaders or careers with a high focus on university background. Therefore, staff from the clinical areas may find it difficult to get onto this pathway. Also the numbers of applications in each year for these programmes are minimal compared to the actual nursing and AHP work force. The total numbers of positions offered for this programme are also minimal. When looking at the career structures and funding streams for medical staff, they are much higher compared to nurses and AHPs, though there are more nursing and AHP workforce compared to medical workforce in the NHS. As per the Health and Social care Information Centre (2014) data, there are more nurses and AHPs in the NHS (435,302) compared to doctors (113,159). The national census shows that 0.1% of the NHS nurses and AHPs are following an academic career (Nursing 346, Midwifery 24 and AHPs 234) compared to 5% of medical staff as senior lecturers, readers and professors (Medical Schools Council 2011; Council of Deans for Health 2012). Even the 'Shape of Caring' (Willis 2015) by the Health Education England report supported this argument by suggesting that the attention and investment given to improve the skills and nursing career model are still not sufficient and there is still not enough flexibility of staff movement between different environments such as clinical and academic. Moreover, as this thesis highlighted those professionals who have completed these pathways tend to leave the clinical areas and move onto a different role due to the lack of career progression. This study indicated that these individuals should have been given the opportunity to progress which in turn would benefit the patient, staff and organisation.

The patients could benefit from the delivery of quality evidence based care, staff will get a research skilled person to motivate, advise and supervise them, and the organisation would be benefiting from a research skilled person to improve its own research performance and culture. Therefore, these individuals should be driving research in their own clinical areas as in Cooke's (2005) terms, *'close to*

practice'. However this study indicated that this closeness to practice was not evident in City Hospital and the investment had not turned into a reality, because of the staff on training programmes leaving City Hospital. The Shape of Caring report suggested that there should be greater development of postgraduate doctoral centres in Local Education and Training Boards (LETB) areas to promote clinical research and increase the number of clinical academics in practice.

Results from this study also indicated that the research culture at the Individual level was also affected by communication issues. This was highlighted more by City Hospital than Riverside Hospital. One of the reason for this may be that the research information was available at the top but not at the bottom level due to a break or lack of communication. When looking at the results for the survey, there was no item in the questionnaire referring to communication to see how the communication issue was important for both hospitals, but the majority of City Hospital participants identified communication issues as a theme on research culture. Literature also pointed out that the communication was one of the twelve identified organizational factors proposed by Bland and Ruffin (1992) affecting research productivity and culture. Though, Bland and Ruffin (1992) identified communication as an important factor many years ago, it was very interesting to find out form this study that communication was still an important factor to create links between each levels and top to bottom and bottom to top levels to improve research culture.

7.2.2 Team level

The survey results suggested that the research culture at divisional or departmental level was found to be higher in City Hospital compared to Riverside Hospital. The skills or support offered by departments in City Hospital had a mean score of 5.28 compared to 3.61 at Riverside Hospital. However, when looking at the mean score

figures, it was just above adequate score of 5 and this may mean that City Hospital participants may have had the research skills and support as just as adequate enough. The skills or support offered at departmental level City Hospital had a mean score of M 5.28 compared to M 3.61 of at Riverside Hospital. This level of support at City Hospital is, however, higher than that given by 134 Australian healthcare professionals in an Australian study(Holden et al. 2012a) of AHPs who rated their department's at a mean of M 4.3 using the RCC tool (10-point scale). However, the Queensland-based dieticians online survey using RCC tool perceived that their departments provided a moderate level of research support in 19 research items [mean (SD) 6.1 (2.5)]. There was a statistically significant difference in the skills of participants from different hospitals (p = 0.001) (Howard et al. 2013). The framework analysis of qualitative data from this study came up with a specific theme of lack of support at team level indicating that more support is needed at middle level. The qualitative data indicated that in City Hospital, there was not enough support available at the team level. Golenko et al. (2012) highlighted that research should be promoted as the organisational core value and importance should be given to obtaining support from senior managers' staff at middle or team level. Support from team (middle level) was highlighted by Jowett et al. (2000) and Smith (1997). Focus group participants and managers felt that though this support was influential, it was not evident to be seen for staff. This was due to other barriers such as communication, time, clinical pressure etc. and these were discussed in the generic theme section of chapter 6.

The interviewees from City Hospital suggested that the communication is failing at the middle level for an unknown reason. The communication issue was highlighted by Hurst (2003) by suggesting that there was a difference in information flow between different Trusts, and some managers were more aware of research information than practitioners. City Hospital staff highlighted that

there should be measures taken to improve communication between top (organisational) and bottom (individual) levels such as having a research link worker or research leader in each clinical area for research and having research as a standing agenda in team and staff meetings. They suggested that this would bring up discussions about research amongst staff and they get opportunities to talk and understand about on-going research. These findings from this thesis compliment the literature on the roles of research champions or leaders to foster a multidisciplinary 'collegial research culture' as mentioned in chapter 2 (Blaber et al. 2013, Segrott et al. 2006). This also tied in with Cooke's (2005) principle on developing the appropriate *'infrastructures enhance Research Capacity Building'*. This infrastructure development of having a leader or link worker at the team level or middle level helps in breaking the communication barrier between organisational and individual level.

Looking at City Hospital survey results, staff rated that they had adequate resources with a mean score of M >5. These items in the questionnaire included: had supported staff research training, had team leaders that supported research, undertook planning that was guided by evidence, had patient involvement in research activities/planning, conducted research activities relevant to practice, supported applications for research scholarships/ degrees, supported a multi-disciplinary approach to research, disseminates research results at research forums/seminars, had incentives and support for mentoring activities, had external partners (e.g. universities) engaged in research incentives and support for mentoring activities and supported peer-reviewed publication of research. However the mean score for 'has team leaders that support research' was just closer to 6 (M5.74). The mean score at City Hospital for 'does team level planning for research development' was M 4.14 which clearly indicated that there was a lack of support at middle level. The overall mean score for the middle level at City Hospital was just over 5 (M5.28) compared to M3.61 at Riverside hospital. Though their

difference in mean score was statistically significant (p<0.001), the level of support in a research focused hospital was expected to be higher and might have been reflected by a higher mean score at divisional level for City Hospital. The focus group discussions and interview results suggested that the team level support is not enough to promote the research culture. As the literature suggested earlier (Golenko et al. 2012) regarding promoting research as a core value, this study's qualitative results also suggested that there are support systems at the organisational level to promote research including funding and infrastructure. However, this was thought to be getting lost at the middle level and hence not reaching the bottom level sufficiently. The main reason highlighted for this break was communication.

7.2.3 Organisational Level

Both the qualitative and quantitative results of the study indicated that the research culture at organisational level is higher compared to Riverside hospital which could be expected considering the level of investment. The mean score for City Hospital was 6.46 compared to 4.92 for Riverside Hospital. City Hospital participants emphasised that there were more resources at the organisation level due to BRC, networks and research and innovation division. They also identified that there were a noticeable increase in research staff, studies and funding. This was supported by Riverside hospital participants by indicating that having more research infrastructures would aid in research culture. The literature from chapter 2 also reflected the same. For example, Farmer and Weston's (2002) framework highlighted that it is important to have a focus at organisational level to reduce barriers, to provide mentorship and training, to improve collaborations and networking. This would help in Research Capacity Building and to promote a whole system approach to improve the individual needs and their research levels. However, there were some concerns raised by City Hospital participants on organisational

support for disseminating the results locally, nationally and internationally. They indicated that it was an individual drive for publication and dissemination rather than an organisational drive. This was supported by the survey item at individual level on 'writing for publication in peer reviewed journals', which had a mean score of M3.81 at City Hospital compared to M3.27 (p< 0.0957) at Riverside Hospital. However, at team level, item on 'the support for peer reviewed publication of research' had a score of m 5.53 at City Hospital and M3.77 at Riverside Hospital with a p value of <0.001). At organisational level, City Hospital had M6.55 compared to M4.2 in Riverside Hospital (p <0.001). Though City Hospital had slightly higher score for this item, their focus group participants pointed out that the publications were done by their own interest as part of their study and roles. Participants also suggested that the organisational drive for publication was relatively low in both hospitals. However one participant indicated that they did not even get to do their publication as there was no support. Another item at organisational level on 'have regular forums/bulletins to present research findings' had mean score of M6.29 at City Hospital compared to M4.22 at Riverside hospital. However, this mean score was out of 10, and hence was slightly above the adequate level (5). At team level, the scores for 'disseminates research results at research forums / seminars' were M5.36 at City Hospital compared to M3.21 (p<0.001). These items had a statistically significant difference between both hospitals apart from the individual level, in which there was no statistically significant difference for the item on dissemination (p< 0.0957). When looking at the way to present results, City Hospital staff indicated that they were not encouraged enough to share their results or present their results at any forums and this could be due to the lack of support at team level as explained earlier. Even though the mean scores on the above items were above 5 for City Hospital, being a research focused organisation, City Hospital still had room for improvement by providing support. Hence City Hospital staff might have felt at the focus group discussions that they were not given enough support to

present research findings. This area covers the principle of '***Dissemination'*** from Cooke's framework (2005). Moreover, dissemination for research findings was highlighted by DOH through its policies. The Research Governance Framework for Health and Social Care highlighted that the research findings should be published and efforts should be made to critically review and disseminate the results (DOH 2005b). Hence the study results concluded that publication and dissemination of research studies also needs to be improved for better research culture. McMahon (2000) highlighted on the RCN report about the proposal for action on the DOH (2000b) strategy 'towards a strategy for nursing research and development' that there should be infrastructure to support implementation of research findings and there should be an organisational culture to compliment the infrastructure. According to a RCN Research Society Annual Conference a workshop report by McMahon et al. (2000:11), the organisational culture should value, "lifelong learning, methodological pluralism, collaboration, equality and most importantly the active involvement of local people". Therefore, previous studies also highlighted the issues around organisational culture.

7.2.4 Supra-organisational

The survey tool had only measured three levels of research culture. However, there were survey items or questions in each level with a generic theme of '***external links and collaboration'***. These items from the survey and the interview themes fit the supra organisational level in Cooke's framework. The literature also suggested that a research culture involving partnerships and collaborations can provide access to more funding, resources and infrastructure (Golenko et al.2012, Pickstone et al. 2008, HEFCE 2001, Perry et al.2008). Many participants from City Hospital pointed out that having a stronger link within the organisation at different levels and collaborating with external agencies and organisations will assist in

raising the research culture. However, it was noted that City Hospital's participants had a lack of their understanding on its own existing links and collaboration with external organisations and agencies. For example, the interview participants were unaware of the collaborative roles between City Hospital and universities. Another example for this was the lack of understanding and knowledge of City Hospital participants about the role of the network and Academic Health Science Centres. Riverside Hospital participants did not even know that these external collaborations existed as suspected by the researcher. The main reason for this lack of awareness could be the communication gap and was clearly identified by the participants. Other potential reasons could be the participant's lack of understanding or an organisational weakness that they have not made these links clear to all staff. When looking at the survey results on the areas pertaining to external links and collaboration, there was one item as 'has external partners (e.g. universities) engaged in research' at departmental level. For this, City Hospital had a team level mean score of m 5.81 compared to m 3.56 at Riverside hospital. The same item was repeated for organisational level and City Hospital's mean score was 6.83 compared to 4.26 at Riverside Hospital. The difference between both hospital's on this item at both levels were statistically significant ($p<0.001$). This indicated that there are core collaboration and links happening at City Hospital. However, focus group participants suggested that there should be more collaboration happening at City Hospital. Some of them were not aware that collaboration existed in City Hospital and the reason for this could be the communication gap as explained earlier.

As City Hospital was a part of NIHR CLAHRCs (Collaborations for Leadership in Applied Health Research and Care) and AHSC (Academic Health Sciences Centre), there should have been more links and collaboration happening at City Hospital. But this was not evident by the scores. Both CLAHRCs and AHSCs were aimed at

bringing more collaborations across different sectors. CLAHRCs work collaboratively with NHS organisations and commissioners, universities, other relevant local organisations and also the Academic Health Science Network (NIHR 2015d). AHSCs were aimed at bringing together the research and health education to improve patient care and healthcare delivery between NHS and Universities (DOH 2013b). Although, the results of this survey were indicating that these collaborations needs to be strengthened, there could also be a possibility that these collaborations were not visible enough for the staff. Also, these may not have been communicated enough to staff at their individual and team level.

7.3 Issues identified from this study

The study also identified issues associated with maintaining a research culture in an organisation. These are: lack of communication and collaboration at three levels, lack of support from the managers at team level, lack of knowledge, resources and funding available at individual level, lack of time and increased clinical pressure and lack of career pathways.

7.3.1 Issue one: Lack of communication and collaboration at three levels

The study has found that lack of proper communication and collaboration can act as a hindrance to an effective research culture. The study identified that having a stronger communication within the organisation will help in improving the understanding about research at different levels. The study suggested that there was a gap in communication between each level, and improving communication channels at different levels of the organisation would help in improving research culture. There were 18.9% respondents who did not know about BRC and 9.1% were unsure about the BRC at City Hospital. Furthermore, when looking at the knowledge on BRC

strategy, there were 8.5% of the respondents who did not know about it and 41.5% were unsure about its existence. This was a very interesting results, as even after eight years of BRC status, there were many nurses and AHPs in City Hospital who did not know about the BRC or its strategy.

The interview results suggested that research needs to be introduced at staff induction, appraisals and mandatory training and at team, ward and managers meetings. This was supported, as mentioned earlier by Schein (1993) that the orientation of new staff to research or the introduction of new staff to research is vital for thriving organisational research culture. Communication is an important factor in achieving all this and was highlighted as an important issue in research culture. However, this was not evident in any part of the literature apart from the Bland and Ruffin (1992) who identified that communication was one of the characteristics affecting research productivity. This thesis was the first and unique study to evidence the issues associated with lack of communication and research culture. The introduction chapter and the literature review have highlighted that RCB and research culture are interrelated. Also, throughout this thesis, Cooke's framework was highlighted as a framework for RCB intervention as it focused on developing structures between and outside health organisations, including the roles of research networks as supra-organisational support. However, it was interesting to note that there was no mention of communication in Cooke's framework. As RCB activities are aimed at different levels of the organisation; Cooke's framework also mirrored the same levels. Because this thesis has highlighted communication as one of the main issues for research culture and hence for RCB, it is important to focus and include communication in the Cooke's framework. Therefore, this study proposes a new version for the Cooke's framework including communication at different levels and is illustrated in Figure 7:2.

Jo Cooke (author of the Cooke's Framework) was contacted to review and approve the modified version of the framework and permission was obtained from her for modifying it. Cooke was interested to see the results of the research and had invited the researcher to meet up with her to discuss the results and future plans following the study. Cook also suggested collaborating with the Australian team to do more work in the area. This was a great move for this study because a well-established researcher in the similar field of interest responded to this work. Furthermore, this new modified framework had been presented to City Hospital's Professor of Nursing and AHPs and also to the Deputy Chief Executive, who was the previous Chief Nurse. Also plans are in place meet with the current Chief Nurse of the City Hospital to discuss the new framework. It had been decided that the professor of NMAHP would be working with the researcher and Jo Cooke to get this new framework implemented in City Hospitals new Nursing and AHP research strategy in 2016.

Participants also identified that adopting a whole level approach (linking between individual, team and organisation) of the organisation can assist in improving the research culture of the organisation as illustrated in Cooke's Framework (Cooke's 2005). When looked at the correlation between each level in each hospital, the p values were <0.0001 indicating that each level is strongly related to other levels and hence the survey results from this study also supports the whole level approach. As explained in the previous sections 7.2.4, the study suggested that collaborating with external agencies and organisations also might assist in raising the research culture. This includes more collaboration with other organisations such as academic networks, universities and AHSC.
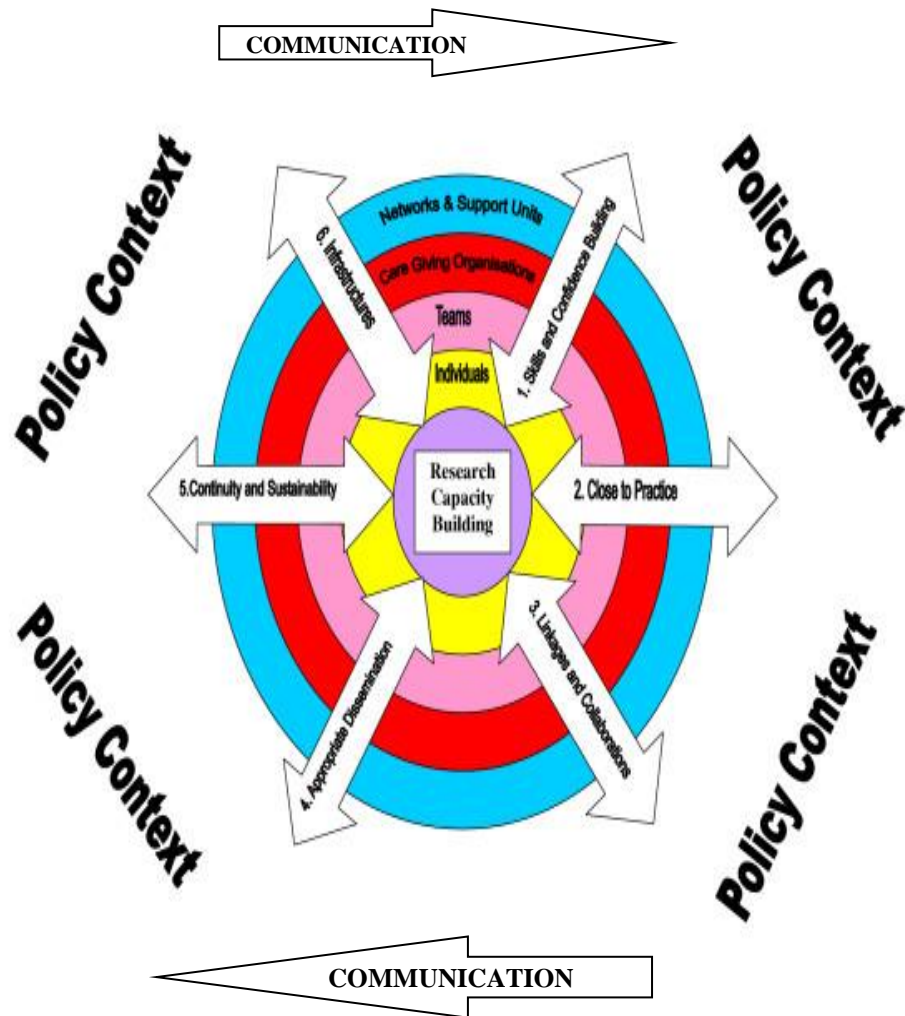
Figure 7:2 Adapted from Cooke (2005): Modified Research Capacity Building: A Framework for evaluation

7.3.2 Issue 2: Lack of support at team level

This study has highlighted that support at team level is important for developing and maintaining a research culture. Lack of support and adequate infra structure and resources at the middle level (team level) was emphasised by this study. It was evident that promoting research as an important role of the organisation and support from middle level senior managers was needed in maintaining a research culture (Tanner and Hale 2002). The study also highlighted that though this support was influential, it was not seen as a priority for staff due to other barriers such as time, clinical pressure etc. Even in this study, some of the participants could not participate in the focus group discussions because of clinical pressure and due to their

manager's lack of support. That is, the managers did not allow the staff to attend the focus groups on the day of intended participation after having previously agreed to release them from clinical duties.

There were also issues around communication failing at different levels, especially at the middle (team level). Moreover, the team level support was important to promote the whole level approach as in the Cooke's Framework (2005). As with Golenko et al. (2012), this study also suggested that managers have a responsibility to make sure that there are enough support and infrastructure to support staff to do research, and promote and facilitate involvement in research activity. The study also identified that there were strategies developed in City Hospital to support research. City Hospital's mission and vision statements included research an important factor and there were strategies developed to support the overall objectives and vision of the organisation. The other BRCs in the UK were also similar and hence this thesis may shed light into the research culture of all of them. The staff were not fully informed about or were aware of these strategies and therefore this thesis suggested a 'whole level' approach to communicate and to follow the strategy which, in theory, will help to create an environment that supported research.

7.3.3 Issue 3: Lack of knowledge, resources and funding available at individual level

This is a unique study looking and comparing at two areas with a difference in research focus .The results from this study have found that lack of resources and funding creates a significant barrier for research culture in both a research focused and non-focused areas. The support from an organisation with more funding and resources could help to overcome the barriers for research culture and enables creating an environment that supports research. Discussion with participants from Riverside Hospital clearly indicated that lack of resources and funding and non-existence of BRC at their area compromised research and research related activities. They also

indicated that there were no named personnel for research in their area which clearly shows lack of resources in terms of man power. As the literature suggested, there should be structures and processes in place within an organisation to overcome any barriers and try to create an environment that supported research to build research capacity. However, it was clear from this study that though City Hospital had its own resources and support available, it was not evident and sufficient enough at the individual level for the staff.

Another issue raised by this study was the lack of opportunities provided to the patients to participate in clinical research due to this low individual level of research culture. Though this was a slightly different topic for discussion in this work, it was one of the driver for this research. However it is important to address this patient recruitment in the thesis because this is also a research activity. The process of recruiting patients or participants into clinical trials or knowledge about clinical trials is still a skill contributing to the 'knowledgeable' aspect of research culture. Recruiting patients into studies and clinical trials is important in meeting the organisational performance targets and for generating the income. Therefore, patient recruitment into research becomes a financial priority too. The literature suggested that all NHS staff should aim to provide patients with basic information so that the patients know that their healthcare organisation is research-active, understand how patients can get involved in clinical research opportunities, and can initiate a conversation regarding research (NIHR 2013, DOH 2013 and HEE 2015a). Moreover, by improving the research culture at individual level, they involve in research and try to apply the research findings to the daily clinical work (HEE 2015a). The NIHR (2013) also supported this in the same line, through its mystery shopper exercise as mentioned in the literature review. The Mystery shopper report suggested that the NHS staff, the mystery shopper approached were not knowledgeable enough to provide information to patients about clinical trials (NIHR 2013). Though nurses and AHPs were not

mentioned in the report, the report highlighted that all NHS staff should be knowledgeable enough to provide this information if they are approached by a patient. The literature review also emphasized that this is not a new commitment, as the NHS Constitution (DOH 2013a:59) included a pledge to give information to patients and to support their choice of clinical research by stating that,

> "*The NHS will do all it can to ensure that patients, from every part of England, are made aware of research that is of particular relevance to them.*"

7.3.4 Issue 4: Lack of time and increase clinical pressure

The study identified many barriers to an effective research culture. Time and clinical pressure along with communication were identified as the most significant barriers in developing the research culture in a research focused environment. It was supported by many other studies that there are still more financial pressure and cost saving in NHS compared to previous years, along with putting pressure to maintain high quality patient care (Ham 2009, Ball et al.2014). As organisations strive to improve efficiency, healthcare workers try to improve quality of the care they provide under immense pressure. Also, low staffing levels and lack of time lead to 'care left undone' (Ball et al.2014).This was highlighted by the study participants too stating that they also struggle to finish their clinical workload. But the fact that quality will be improved by active research and evidence is sometimes forgotten. However, as highlighted by Jones (2010), nurses are asked to undertake bedside nursing and research together because:

> "*Knowledge of what nurses do and how they do it is essential…*" (Jones, 2010:188).

So the organisation and management need to have a clear vision or insight into what is expected from a nurse or AHP during their work time. Knowledge and understanding of external funding sources for

research increases their opportunities for conducting research, enhances their research experience, and hence improves the organisational research culture. Ried et al. (2007) also identified that lack of time, funding and support along with lack of expert advice were significant barriers to future research activity. This was echoed by a majority of the focus group participants and managers despite research investment and research strategies. In the current organisation culture internal resources are limited due to the financial constraints. This resulted in nurses and AHPs compromising further if they have a lack of knowledge of external sources available from different funding resources. Although communication was not listed as a barrier in the survey results, time (n159 responses – n100 in City Hospital, n59 in Riverside) and work pressure (n158 responses n102in City Hospital, n56 in Riverside Hospital) were the most reported barrier by both City Hospital and Riverside hospital participants. This showed that there were some similarities between the research focused City Hospital and non-research focused Riverside hospital.

7.3.5 Issue 5: Lack of career pathways

The study found that City Hospital had failed in establishing the career pathways despite large investment. As discussed in chapter 2, there are many initiatives by the Department of health (NIHR 2015c) to develop nurses and AHPs as researchers such as the Integrated Clinical Academic Programme (ICAP) programmes, MRes courses, and these were introduced in City Hospital too. However, it was found that there was no strategic approach to develop these staff that completed the pathways to the roles aimed at patient benefit, at City Hospital. Two of the staff who had completed their PhD has left City Hospital due to this lack of support and pathway. It was also evident from this study that there were no experienced nurses and AHPs to lead research projects at City Hospital. Moreover there were only very few training opportunities available to staff. Also, though there

was some encouragement to improve greater participation in research from all clinical professional disciplines, the majority of the projects were still led by the medical profession. This was supported by the literature in chapter 2 that the medical profession has a prominent research culture and nurses and AHPs were left behind.

7.4   Difference between nurses and AHPs

When looking at the individual professions, the interview results indicated that there may be a difference in research culture between AHPs and nurses. The interview participants thought that AHPs were more research active compared to nurses indicating that AHPs have a more established research culture. However, they also suggested that AHPs had to do research as part of their masters and masters (which had included research component) was always a desirable qualification in their job descriptions for career progression. Looking at the literature, it was indicated that in comparison to the medical and nursing professions, the allied health professions report significantly lower levels of research capacity and culture (Pater et al. 2011, Holden et al. (2012b), Pickstone et al.2008, Ried et al.2006). However, the survey results indicated that there was not much difference in the research culture between nurses and AHPs. The mean score at the Individual level for nurses were 4.24 and of AHPs were 4.54 (P 0.38). At team level, they were 4.51 (nurses) and 5.1(AHPs) with a p value of 0.14. The organisational level scores were 5.94 and 5.92 respectively (p 0.94). The total mean score of all levels for nurses were m 4.69 compared to AHPs (5.16) with a p value of 0.12 which was not statistically significant. Though the mean scores for nurses were slightly less than that of AHPs, the difference was not statistically significant as all the p values were above 0.05. Therefore it is hard to conclude whether there was a difference in research culture between nurses and AHPs. So, the study concluded that there may not be any difference in research culture between nurses and AHPs.

7.5 Strengths of the study

This is the first study in the research culture domain comparing the differences between two professional groups and two hospitals. As mentioned in the literature review, there were many studies looking at effectiveness of Research Capacity Building interventions in different settings and professions. However, there were no studies looking at the research culture specifically. The majority of the studies on RCB and evaluating the effectiveness were done in Australia using the RCC tool, mainly because; the tool was developed and implemented in Australia itself. Moreover, the majority of these studies were focusing on AHPs rather than the nursing profession. So this was the first study combining and comparing both professionals. Also, this study around research culture was both knowledgeable and timely, by reflecting the changing focus of health care research in the 21st century, and has the potential to inform the research debate. Internationally, it was important to highlight that this was the first study which looked at a non-research focused area for comparison with a research focused areas. Using a mixed methodology for measuring research culture was first used in this study. Hence, this is a novel and unique study which provided new knowledge towards the research culture of nurses and AHPs and organisations with or without research focus. An important strength of this study is that, the modification of the Cooke's framework by adding communication component which was approved by Cooke herself.

In Australia, the RCC tool was used to measure research culture mainly on AHPs and in primary and secondary care and which may suggest caution should be taken when generalising the results in tertiary care or other health professions. However, this study has taken place in one of the large tertiary healthcare organisations in the UK and Europe which has had a Biomedical Research Centres

(BRCs) status. There are other BRCs and Biomedical Research Units in the UK and hence this study results may represent these areas too. Another strength of this study is that this was the first study using the RCC tool in the UK and outside Australia to measure research culture. This was used in discussion with the Australian team and they also have confirmed that this was the first non-Australian study using the tool and they were looking forward to the results of this study.

Though the RCC tool was based on the Cooke's framework, this was the first study that used both the tool and framework to analyse, conclude and present the results. Also, the data that emerged from this study through triangulation were valid and more generalisable. These tend to be more extensive than the data that emerged from single method studies. Also this is a unique study using a mixed methodology to measure research culture combining survey and focus groups and interviews. Moreover, this is the first study comparing a research focused area with a non-research focused area.

The survey participants in this study were AHPs and nurses. However, more nurses responded to the survey compared to AHPs in both areas (71.8 % nurses and 28.2% AHPs). The national census data showed that there were more nurses (356,850) compared to AHPs (156,723). Hence the sample used in this study actually reflects that national population.

A further strength of this study was that all the participants were from one part or division of a large healthcare organisation in City Hospital and from Riverside Hospital and they have expressed their ideas and views from their own perspective and not on behalf of their organisation. The study findings are the genuine reflection of a staff view on research culture within their organisation. The research culture identified and the views expressed by senior managers and

staff may have some impact on research culture specific to this type and size of both organisations. Hence, the results of this study can be used and tested in other organisations of similar size with similar issues facing similar issues as identified by this thesis.

7.6   Limitations of the study

When discussing the limitations of this study, it would be important to look at the levels of results reported at City Hospital for research culture. The study suggested that the main reason for this difference in the level of culture in City Hospital compared to Riverside hospital could be due to its research focus and its huge investment. However, there could be other related possible reasons and factors too. The first factor would be the respondent bias because the respondents of survey could be those who are exposed to research from City Hospital compared to those who are not. However as the focus groups included research naive groups, this limitation could have been covered. Another reason could be that, as the literature suggested there was an upward trend in research focus and activities across the NHS. However, it can be argued that the same level of NHS changes should have affected both hospitals and not just City Hospital. Hence the results obtained were the actual reflection of the staff and organisations. Also, as the survey collected data at a single point in time; it may be difficult to argue these results from this study as generalisable without doing one or more surveys at different points in time. Due to the time and resource limitations in this study and the methodology adopted, only one survey was done. Therefore, it was suggested by this thesis that further evaluation is needed to assess the culture at different time frames to generalise the research findings.

Another main limitation of this study was that the reasons for the uncertainties of research culture items in RCC were not identified. The survey results of the study indicated that there was much

uncertainty amongst City Hospital participants at Individual, team and organisational levels. This can be the limitation of the tool itself as it would have been better to avoid these unsure answers in the tool to avoid uncertainty. However, these unsure answers were not removed, in the survey tool of this thesis, to maintain the validity of the tool. There can be many conclusions made on this uncertainty from this study, such as the barriers discussed in the above sections especially the communication gap between the levels. The tool also had some other limitations such as not being able to capture the information about the participant information. That is, the tool had no item about the survey respondents asking patients to participate in research or respondents being comfortable about talking about research. However, this was covered by the qualitative part of the study.

Though, this was the first study using the RCC tool and interview methods to evaluate the research culture within City Hospital and in the UK, caution should be taken when interpreting the results. The perceptions of senior managers, nurses and AHPs on research culture might be higher due to the promoting change in the local research focus; and also change in supporting the further development of nursing, midwifery and AHP strategies in City Hospital.

7.7   Clinical implications

From the results of the study, more implementation plans could be put in place to improve the research culture of nurses and AHPs. Having a strong research culture will help to develop an environment in the organisation that enabled and supported creative work to generate new knowledge and that provided researchers with opportunities to interact between each other, collaborate with other organisations and grow. From this study, it may not be appropriate to expect too many direct patient benefits. However by understanding the ways to improve research culture, there may be an increase in

number of publications, presentations and changes in practice. Moreover, more people will be coming forward to research clinical issues. There will be more appreciation of actual and potential gains for staff and patients, the healthcare organisation and its reputation, locally, nationally and internationally. By improving the research culture of nurses and AHPs, it might be postulated that the patient care will be evidence-based and this will improve the quality of care given directly to patients and increase public confidence.

7.8 Recommendations

This study highlighted the recommendations on strategies for improving the research culture in health care organisations by having a whole level approach. This approach would assist in developing a culture that supports research. Improving communication and support from senior managers at middle level can also be an aid to facilitate research. This study suggested that measures should be taken to improve communication between top (organisational), middle (team) and bottom (individual) levels such as having a research link worker in each clinical area for research, having research as a standing agenda in team and staff meetings. Hence it would bring up discussions about research amongst staff and also provide them with opportunities to talk about and understand on-going research studies. This also initiates the sharing of ideas and research information amongst staff which would enable the development of research arising from practice.

This work suggests that there was a statistically significant difference in the research culture between a research focused and non-research focused area at each level. The results also showed that there was a statistically significant difference in education and qualification of research participants between City Hospital and Riverside Hospital. This may indicate that providing more educational opportunities for staff may help in improving research culture. Also,

nationally, nursing has become a graduate profession, where research is part of their course and their practice and hence there may be a possibility of research culture getting embedded.

The study also makes recommendations to include research related points in job descriptions, interviews and appraisals. As the study was mainly conducted in a particular division of City Hospital caution must be taken on generalising the results. Therefore a recommendation from this study would be to conduct a large scale study evaluating the research culture of larger sized organisations using its entire nursing and AHP population to understand their culture. The study shed light into the fact that research investment may not be the main issue for staff, but it is the research culture that affected the skills and confidence of staff in providing evidence-based high quality patient care and this may be an area of future research. Therefore, economic analysis studies of research funding and research culture could also be done in the future. As this thesis has done exploratory comparisons between the hospitals, and the results from this might be useful to generate a hypothesis for later studies, another study recommendation from this thesis is an international comparison of research culture using the tool. It would also be interesting to see the results of the same study with an RCC tool with no unsure answers or uncertainties'. In order to do that, the RCC tool need to undergo validity and reliability testing again as these may get distorted by changing the unsure answers.

7.9   Conclusion

The discussions for this study identified the main themes on research culture of nurses and AHPs and how this was affected in an organisation.

7.9.1 The key findings of the study

- This is the first unique and novel study that combined and compared both nursing and AHP professionals

- There was a difference in the research culture between the research focused and non-research focused area

- The research culture of the research focused organisation was slightly more than adequate

- There were statistically significant differences between research focused and non-research focused areas in their research culture at individual, team and organisational level

- There are no significant difference in research culture of nurses and AHPs

- A whole level approach needs to be carried out to promote research culture with a focus to team level

- A whole of organisation approach can assist in developing an environment and culture that supports research.

- In both research focused and non-focused areas, the organisational drive for publication and dissemination was low

- There are a number of barriers, enablers and motivators for research and more were identified by the research focused area

- There were similarities between research focused and non-research focused areas on barriers, enablers and motivators of research

- Issues in communication failings and a wide gap in middle level support were highlighted more from this study compared to evidences in the literature.

- The six principles of Cooke's framework along with communication element need to be implemented to improve the research culture of an organisation.

The discussions clearly pointed out that a whole level of approach (i.e. organisation, team and individual) is essential in developing and maintaining the research culture of an organisation irrespective of its research focus. By improving communication and collaboration, at all levels, internal as well as with external agencies, networks, universities and organisations can help to improve the research culture. Along with other barriers and motivators, communication was considered as the most important factor in promoting research culture which was not highlighted enough by any of literature examined. This study indicated that communication between all levels is an important factor for any framework for research capacity, building or culture development and suggested that Cooke's (2005) framework should include communication along with other factors. Also, the research strategies need to be communicated to staff at all levels. Managers should make sure that there are systems in place to provide support for staff to get involved in research. Moreover, there should be organisational core value and support from senior managers' staff at middle /team level to promote research culture. There should be proper career pathways for nurses and AHPs and sustainability of the staff should be considered for those who have completed their studies. Overall, research should not be restricted to those who have research in their job description. Nurses and AHPs working within a positive research culture promotes patient participation in research, evidence based practise and high quality care. Therefore, healthcare organisations should strive to improve the research culture of nurses and AHPs by tackling the barriers that prevent it from flourishing.

APPENDIX: 1 ORIGINAL RCC TOOL

Research Capacity in Context Tool
Developed by Queensland Health and Griffith University

This tool operates on the premise that Research Capacity Building occurs within the context of the organisation. For that reason we ask questions of your perceptions of the research capacity and its supports on three levels: organisation, team and individual level.

1. ORGANISATION LEVEL

1.1 Please rate your <u>organisation's</u> success or skill level for each of the following aspects by circling a score on a 1-10 scale (1=no success/skill and 10=highest possible success/skill)

i) has adequate resources to support staff research training	1...2...3...4...5...6...7...8...9...10	Unsure
ii) has funds, equipment or admin to support research activities	1...2...3...4...5...6...7...8...9...10	Unsure
iii) has a plan or policy for research development	1...2...3...4...5...6...7...8...9...10	Unsure
iv) has senior managers that support research	1...2...3...4...5...6...7...8...9...10	Unsure
v) ensures staff career pathways are available in research	1...2...3...4...5...6...7...8...9...10	Unsure
vi) ensures organisation planning is guided by evidence	1...2...3...4...5...6...7...8...9...10	Unsure
vii) has consumers involved in research	1...2...3...4...5...6...7...8...9...10	Unsure
viii) accesses external funding for research	1...2...3...4...5...6...7...8...9...10	Unsure
ix) promotes clinical practice based on evidence	1...2...3...4...5...6...7...8...9...10	Unsure
x) encourages research activities relevant to practice	1...2...3...4...5...6...7...8...9...10	unsure
xi) has software programs for analysing research data	1...2...3...4...5...6...7...8...9...10	unsure
xii) has mechanisms to monitor research quality	1...2...3...4...5...6...7...8...9...10	unsure
xiii) has identified experts accessible for research advice	1...2...3...4...5...6...7...8...9...10	unsure
xiv) supports a multi-disciplinary approach to research	1...2...3...4...5...6...7...8...9...10	unsure
xv) has regular forums/bulletins to present research findings	1...2...3...4...5...6...7...8...9...10	unsure
xvi) engages external partners (e.g. universities) in research	1...2...3...4...5...6...7...8...9...10	unsure
xvii) supports applications for research scholarships/ degrees	1...2...3...4...5...6...7...8...9...10	unsure
xviii) supports the peer-reviewed publication of research	1...2...3...4...5...6...7...8...9...10	unsure

1.2 Please comment on any of the above issues indicating the item you are commenting on.

2. TEAM LEVEL

2.1 Please rate your <u>team's</u> current success or skill level for each of the following aspects by circling a score on a 1-10 scale (1=no success/skill and 10=highest possible success/skill)

i) has adequate resources to support staff research training	1...2...3...4...5...6...7...8...9...10	unsure
ii) has funds, equipment or admin to support research activities	1...2...3...4...5...6...7...8...9...10	unsure
iii) does team level planning for research development	1...2...3...4...5...6...7...8...9...10	unsure
iv) ensures staff involvement in developing that plan	1...2...3...4...5...6...7...8...9...10	unsure
v) has team leaders that support research	1...2...3...4...5...6...7...8...9...10	unsure
vi) provides opportunities to get involved in research	1...2...3...4...5...6...7...8...9...10	unsure
vii) does planning that is guided by evidence	1...2...3...4...5...6...7...8...9...10	unsure
viii) has consumer involvement in research activities/planning	1...2...3...4...5...6...7...8...9...10	unsure
ix) has applied for external funding for research	1...2...3...4...5...6...7...8...9...10	unsure
x) conducts research activities relevant to practice	1...2...3...4...5...6...7...8...9...10	unsure
xi) supports applications for research scholarships/ degrees	1...2...3...4...5...6...7...8...9...10	unsure
xii) has mechanisms to monitor research quality	1...2...3...4...5...6...7...8...9...10	unsure
xiii) has identified experts accessible for research advice	1...2...3...4...5...6...7...8...9...10	unsure
xiv) disseminates research results at research forums/seminars	1...2...3...4...5...6...7...8...9...10	unsure
xv) supports a multi-disciplinary approach to research	1...2...3...4...5...6...7...8...9...10	unsure
xvi) has incentives & support for mentoring activities	1...2...3...4...5...6...7...8...9...10	unsure
xvii) has external partners (e.g. universities) engaged in research	1...2...3...4...5...6...7...8...9...10	unsure
xviii) supports peer-reviewed publication of research	1...2...3...4...5...6...7...8...9...10	unsure
xix) has software available to support research activities	1...2...3...4...5...6...7...8...9...10	unsure

2.2 What are the biggest barriers to research in your team?

2.3 What are the biggest motivators to research in your team?

2.4 If you are part of more than one team please discuss how the characteristics of the other teams or your role in these teams impact on your ability to do research.

3. INDIVIDUAL LEVEL

3.1 Please rate your <u>own</u> current success or skill level for each of the following aspects by circling a score on a 1-10 scale (1=no success/skill and 10=highest possible success/skill)

i) Finding relevant literature	1...2...3...4...5...6...7...8...9...10	unsure
iii) Critically reviewing the literature	1...2...3...4...5...6...7...8...9...10	unsure
iii) Using a computer referencing system (e.g. Endnote)	1...2...3...4...5...6...7...8...9...10	unsure
iv) Writing a research protocol	1...2...3...4...5...6...7...8...9...10	unsure
v) Securing research funding	1...2...3...4...5...6...7...8...9...10	unsure
vi) Submitting an ethics application	1...2...3...4...5...6...7...8...9...10	unsure
vii) Designing questionnaires	1...2...3...4...5...6...7...8...9...10	unsure
viii) Collecting data e.g. surveys, interviews	1...2...3...4...5...6...7...8...9...10	unsure
ix) Using computer data management systems	1...2...3...4...5...6...7...8...9...10	unsure
x) Analysing qualitative research data	1...2...3...4...5...6...7...8...9...10	unsure
xi) Analysing quantitative research data	1...2...3...4...5...6...7...8...9...10	unsure
xii) Writing a research report	1...2...3...4...5...6...7...8...9...10	unsure
xiii) Writing for publication in peer-reviewed journals	1...2...3...4...5...6...7...8...9...10	unsure
xiv) Providing advice to less experienced researchers	1...2...3...4...5...6...7...8...9...10	unsure

3.2 Please indicate any research activity you are currently involved with. Tick (✓) as many as apply

> Writing a research report, presentation or paper for publication
>
> Writing a research protocol
>
> Submitting an ethics application
>
> Collecting data e.g. surveys, interviews
>
> Analysing qualitative research data
>
> Analysing quantitative research data
>
> Writing a literature review
>
> Applying for research funding
>
> Not currently involved with research
>
> Other _____

3.3 Please state whether research related activities are part of your role description

☐ **Yes**

☐ **No**

If yes, what provisions are made for you to conduct research as part of your role? Tick (✓) as many as apply

Software	Administrative support
Research supervision	Training
Time	Library access
Research funds	Other
	_____
	_

3.4 Please indicate if you have completed any of the following research activities in the past 12 months. Tick (✓) as many as apply

Secured research funding
Co-authored a paper for publication
Presented research findings at a conference
No research activity completed in the past 12 months
Other _____

3.5 What are the barriers to research for you personally? Tick (✓) as many as apply

• Lack of time for research	• Lack of library/internet access
• Lack of suitable backfill	• Not interested in research
• Other work roles take priority	• Other personal commitments
• Lack of funds for research	• Desire for work / life balance
• Lack of support from management	• Lack of a co-ordinated approach to research
• Lack access to	• Lack of skills for research
• equipment for research	• Intimidated by research language
• Lack of administrative support	• Intimidated by fear of
• Lack of software for research	• getting it wrong
• Isolation	• Other

3.6 What are the motivators to do research for you personally? Tick (✓) as many as apply

• To develop skills	• Grant funds
• Career advancement	• Links to universities
• Increased job satisfaction	• Forms part of Post Graduate study
• Study or research scholarships available	• Opportunities to participate at own level
• Dedicated time for research	• Problem identified that needs changing
• Research written into role description	• Desire to prove a theory / hunch
• Colleagues doing research	• To keep the brain stimulated
• Mentors available to supervise	• Increased credibility
• Research encouraged by managers	• Other _____

3.7 Please describe your current work role, e.g. key services delivered, role in the team

3.8 Please indicate your professional qualifications

Certificate
Undergraduate
Postgraduate
PhD

3.9 Are you currently enrolled in any higher degree study or other professional development related to research?

☐ **Yes**

☐ **No**

If yes, please indicate what level of study you are enrolled in

Certificate
Undergraduate
Postgraduate
PhD

Research Capacity in Context Tool For further information please contact: Sue Pager Metro South Hospital and Health Service, Brisbane, QLD Susan_pager@health.qld.gov.au This document is licensed under the following;

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Research Capacity in Context Tool

Developed by Queensland Health and Griffith University

This tool operates on the premise that Research Capacity Building occurs within the context of the organisation. For that reason we ask questions of your perceptions of the research capacity and its supports on three levels: organisation, team and individual level.

1. **Trust Level**

1.1 **Please rate your <u>organisation's</u> success or skill level for each of the following aspects** by circling a score on a 1-10 scale (1=no success/skill and 10=highest possible success/skill)

i) has adequate resources to support staff research training	1...2...3...4...5...6...7...8...9...10	unsure
ii) has funds, equipment or admin to support research activities	1...2...3...4...5...6...7...8...9...10	unsure
iii) has a plan or policy for research development	1...2...3...4...5...6...7...8...9...10	unsure
iv) has senior managers that support research	1...2...3...4...5...6...7...8...9...10	unsure
v) ensures staff career pathways are available in research	1...2...3...4...5...6...7...8...9...10	unsure
vi) ensures organisation planning is guided by evidence	1...2...3...4...5...6...7...8...9...10	unsure
vii) has consumers involved in research	1...2...3...4...5...6...7...8...9...10	unsure
viii) accesses external funding for research	1...2...3...4...5...6...7...8...9...10	unsure
ix) promotes clinical practice based on evidence	1...2...3...4...5...6...7...8...9...10	Unsure
x) encourages research activities relevant to practice	1...2...3...4...5...6...7...8...9...10	Unsure
xi) has software programs for analysing research data	1...2...3...4...5...6...7...8...9...10	Unsure
xii) has mechanisms to monitor research quality	1...2...3...4...5...6...7...8...9...10	Unsure
xiii) has identified experts accessible for research advice	1...2...3...4...5...6...7...8...9...10	Unsure
xiv) supports a multi-disciplinary approach to research	1...2...3...4...5...6...7...8...9...10	unsure
xv) has regular forums/bulletins to present research findings	1...2...3...4...5...6...7...8...9...10	Unsure
xvi) engages external partners (e.g. universities) in research	1...2...3...4...5...6...7...8...9...10	Unsure
xvii) supports applications for research scholarships/ degrees	1...2...3...4...5...6...7...8...9...10	Unsure
xviii) supports the peer-reviewed publication of research	1...2...3...4...5...6...7...8...9...10	Unsure

2. Divisional/ Ward/Department level

2.1 Please rate your <u>team's</u> current success or skill level for each of the following aspects by circling a score on a 1-10 scale (1=no success/skill and 10=highest possible success/skill)

i) has adequate resources to support staff research training	1...2...3...4...5...6...7...8...9...10	Unsure
ii) has funds, equipment or admin to support research activities	1...2...3...4...5...6...7...8...9...10	Unsure
iii) does team level planning for research development	1...2...3...4...5...6...7...8...9...10	Unsure
iv) ensures staff involvement in developing that plan	1...2...3...4...5...6...7...8...9...10	Unsure
v) has team leaders that support research	1...2...3...4...5...6...7...8...9...10	Unsure
vi) provides opportunities to get involved in research	1...2...3...4...5...6...7...8...9...10	Unsure
vii) does planning that is guided by evidence	1...2...3...4...5...6...7...8...9...10	Unsure
viii) has consumer involvement in research activities/planning	1...2...3...4...5...6...7...8...9...10	unsure
ix) has applied for external funding for research	1...2...3...4...5...6...7...8...9...10	Unsure
x) conducts research activities relevant to practice	1...2...3...4...5...6...7...8...9...10	Unsure
xi) supports applications for research scholarships/ degrees	1...2...3...4...5...6...7...8...9...10	Unsure
xii) has mechanisms to monitor research quality	1...2...3...4...5...6...7...8...9...10	Unsure
xiii) has identified experts accessible for research advice	1...2...3...4...5...6...7...8...9...10	Unsure
xiv) disseminates research results at research forums/seminars	1...2...3...4...5...6...7...8...9...10	Unsure
xv) supports a multi-disciplinary approach to research	1...2...3...4...5...6...7...8...9...10	Unsure
xvi) has incentives & support for mentoring activities	1...2...3...4...5...6...7...8...9...10	Unsure
xvii) has external partners (e.g. universities) engaged in research	1...2...3...4...5...6...7...8...9...10	Unsure
xviii) supports peer-reviewed publication of research	1...2...3...4...5...6...7...8...9...10	Unsure
xix) has software available to support research activities	1...2...3...4...5...6...7...8...9...10	Unsure

3. INDIVIDUAL LEVEL

3.1 Please rate your <u>own</u> current success or skill level for each of the following aspects by circling a score on a 1-10 scale (1=no success/skill and 10=highest possible success/skill)

i) Finding relevant literature	1...2...3...4...5...6...7...8...9...10	Unsure
iii) Critically reviewing the literature	1...2...3...4...5...6...7...8...9...10	Unsure
iii) Using a computer referencing system (e.g. Endnote)	1...2...3...4...5...6...7...8...9...10	Unsure
iv) Writing a research protocol	1...2...3...4...5...6...7...8...9...10	Unsure
v) Securing research funding	1...2...3...4...5...6...7...8...9...10	Unsure
vi) Submitting an ethics application	1...2...3...4...5...6...7...8...9...10	Unsure
vii) Designing questionnaires	1...2...3...4...5...6...7...8...9...10	Unsure
viii) Collecting data e.g. surveys, interviews	1...2...3...4...5...6...7...8...9...10	Unsure
ix) Using computer data management systems	1...2...3...4...5...6...7...8...9...10	Unsure
x) Analysing qualitative research data	1...2...3...4...5...6...7...8...9...10	Unsure
xi) Analysing quantitative research data	1...2...3...4...5...6...7...8...9...10	Unsure
xii) Writing a research report	1...2...3...4...5...6...7...8...9...10	Unsure
xiii) Writing for publication in peer-reviewed journals	1...2...3...4...5...6...7...8...9...10	Unsure
xiv) Providing advice to less experienced researchers	1...2...3...4...5...6...7...8...9...10	Unsure

3.2 Please indicate any research activity you are currently involved with. Tick (✓) as many as apply

Writing a research report, presentation or paper for publication

Writing a research protocol

Submitting an ethics application

Collecting data e.g. surveys, interviews

Analysing qualitative research data

Analysing quantitative research data

Writing a literature review

Applying for research funding

Not currently involved with research

Other _____

3.6 Please state whether research related activities are part of your role description

☐ **Yes**

☐ **No**

3.4 What are the barriers to research for you personally? Tick (✓) as many as apply

• Lack of time for research	• Lack of library/internet access
• Lack of suitable backfill	• Not interested in research
• Other work roles take priority	• Other personal commitments
• Lack of funds for research	• Desire for work / life balance
• Lack of support from management	• Lack of a co-ordinated approach to research
• Lack access to equipment for research	• Lack of skills for research
• Lack of administrative support	• Intimidated by research language
• Lack of software for research	• Intimidated by fear of getting it wrong
• Isolation	• Other _____ _

3.5 What are the motivators to do research for you personally?

Tick (✓) as many as apply

• To develop skills • Career advancement • Increased job satisfaction • Study or research scholarships available • Dedicated time for research • Research written into role description • Colleagues doing research • Mentors available to supervise • Research encouraged by managers	• Grant funds • Links to universities • Forms part of Post Graduate study • Opportunities to participate at own level • Problem identified that needs changing • Desire to prove a theory / hunch • To keep the brain stimulated • Increased credibility • Other

3.6 Please indicate your professional qualifications

Certificate **Undergraduate** **Postgraduate** **PhD**

3.7 Are you currently enrolled in any higher degree study or other professional development related to research?

☐ **Yes**

☐

☐ **No**

If yes, please indicate what level of study you are enrolled in

Certificate
Undergraduate
Postgraduate
PhD

3.8 Are you a:

☐ **Male**

☐ **Female**

4. Please indicate your clinical Division

 a. Trust

 B: District General

5. **Do you know about Biomedical Research Centre?**

☐ **Yes**

☐ **No**

6. Do we have a Nursing, Midwifery and Allied Health Professional research Strategy?

☐ **Yes**

☐ **No**

REFERENCES

Albert, E. and Mickan, S. (2003) 'Closing the gap and widening the scope. New directions for Research Capacity Building in primary health care.' Australian Family Physician, 32(12) pp. 1038–1040.

Altbach, P. (2009) 'Peripheries and centers: research universities in developing countries.' Asia Pacific Education Review. Springer Netherlands, 10(1) pp. 15–27.

Aguiler, J. L. (1981). Insider research: An ethnography of a debate. In D. A. Messerschmidt (Ed.), Anthropologists at home in North America (pp. 15-26). New York, NY: Cambridge University Press

Archer, J. (1992) 'Gender stereotyping of school projects.' The psychologists, 5 pp. 66–69.

Arksey, H. and Knight, P. T. (1999) Interviewing for Social Scientists: An Introductory Resource with Examples. London; Thousand Oaks; New Delhi: SAGE Publications.

Attride-Stirling, J. (2001) 'Thematic networks: an analytic tool for qualitative research.' Qualitative Research pp. 385–405.

AUKUH Clinical Academic Careers Group for Nursing and Midwifery (2012) 'The Nurse and Midwife Research Clinical Academic : Development , Progress and Challenges Annual Report of Activity May 2011 to June 2012.' London: AUKUH.

Bäck-Pettersson, S, Hermansson, S, Sernert,N and Björkelund,C(2008) "Research priorities in nursing—a Delphi study among Swedish nurses," Journal of Clinical Nursing, vol. 17, no. 16, pp. 2221–2231.

Ball, J. E., Murrells, T., Rafferty, A. M., Morrow, E. and Griffiths, P. (2014) '"Care left undone" during nursing shifts: associations with workload and perceived quality of care.' BMJ Quality and Safety, 23(2) pp. 116–125.

Bamberg, J., Perlesz, A., McKenzie, P. and Read, S. (2010) 'Utilising implementation science in building research and evaluation capacity in community health.' Australian Journal of Primary Health, 16(4) pp. 276–283.

Bates, I., Akoto, A. Y. O., Ansong, D., Karikari, P., Bedu-Addo, G., Critchley, J., Agbenyega, T. and Nsiah-Asare, A. (2006) 'Evaluating health Research Capacity Building: An evidence-based tool.' PLoS Medicine pp. 1224–1229.

Begley, C., McCarron, M., Huntley-Moore, S., Condell, S. and Higgins, A. (2014) 'Successful Research Capacity Building in academic nursing and midwifery in Ireland: An exemplar.' Nurse Education Today. Elsevier Ltd, 34(5) pp. 754–760.

Bell, J. (2005). Doing your research project (4th ed.). Maidenhead, England: Open University Press.

Blaber, B., Woltz, P. and Bautistia, M. (2013) 'Bedside research nurse champions: Enhancing research knowledge and multidisciplinary Research culture.' In Neurocritical Care. Conference: 11th Annual Meeting of the Neurocritical Care Society Philadelphia, PA United States. Conference Publication: (var.pagings).   .

Blakeman, T. M., Comino, E. J., Zwar, N. A. and Harris, M. F. (2001) 'Evaluating the introduction of the enhanced primary care 75+ annual health assessments.' Australian family physician, 30(10) pp. 1004–1009.

Bland, C. J. and Ruffin, M. T. 4th (1992) 'Characteristics of a productive research environment: literature review.' Academic Medicine, 67(6).

Borbasi, S., Emden, C. and Jackson, D. (2005) 'Nursing research programs gather strength in Australia.' Collegian (Royal College of Nursing, Australia) pp. 7–10.

Bornmann, L. and Daniel, H. D. (2007) 'What do we know about the h index?' Journal of the American Society for Information Science and Technology, 58(9) pp. 1381–1385.

Bornmann, L. and Daniel, H.-D. (2009) 'The state of h index research. Is the h index the ideal way to measure research performance?' EMBO reports, 10(1) pp. 2–6.

Brannen, J. (1992). Mixing Methods: Qualitative and Quantitative Research. Aldershop: Ashgate Publishing Limited.

Braun, T., Glänzel, W. and Schubert, A. (2006) 'A Hirsch-type index for journals.' Scientometrics, 69(1) pp. 169–173.

Browne, N., Harris, R., Hunt, J., Kelly, D., Kelley, K., Pearce, S., Plant, H., Richardson, A. and Sitzia, J. (2002) 'An assessment of lead R&D nursing roles in acute trusts and an evaluation of their status within the NHS research agenda.' Nursing Times Research, 7 (4) pp. 274–286.

Bryman, A. (2004) Social Research Methods. 2nd ed., Oxford: OUP Oxford.

Bubb, S. (2014) Winterbourne view – time for change. NHS England.(Accessed on 2 Feb 2015)

http://www.england.nhs.uk/wpcontent/uploads/2014/11/transforming-commissioning-services.pdf.

Burns, N. and Grove, S. K. (2008) The Practice of Nursing Research: Conduct, Critique, & Utilization. 6th ed., St. Louise: Elsevier Science Health Science Division.

Butterworth, T. (2010) 'Review: The challenges facing healthcare lecturers and professors to lead and promote a research-based culture for practice.' Journal of Research in Nursing, 15 (3) pp. 259–260.

Byham-Gray, L. D., Gilbride, J. A., Dixon, L. B. and Stage, F. K. (2006) 'Predictors for Research Involvement among Registered Dietitians.' Journal of the American Dietetic Association, 106(12) pp. 2008–2015.

Carter, Y. H., Shaw, S. and Sibbald, B. (2000) 'Primary care research networks: an evolving model meriting national evaluation.' British Journal of General Practice, 50 pp. 859–860.

Charmaz, K. (2006) Constructing grounded theory: a practical guide through qualitative analysis.London: Sage Publications Ltd..

Chavez, C. (2008). Conceptualizing from the inside: Advantages, complications, and demands on insider positionality. The Qualitative Report, 13(3), 474-494. Retrieved from http://www.nova.edu/ssss/QR/QR13-3/chavez.pdf

Chawla-Duggan, R.(2007). "Breaking Out, Breaking Through: Accessing Knowledge in a Non-Western Overseas Educational Setting – Methodological Issues for an Outsider." Compare 37:185–200.

Cheek, J., M, C. and Radoslovich, H. (2009) 'Connecting what we do with what we know: building a community of research and practice.' International Journal of Older People Nursing, 4(3) pp. 233–238.

Cheetham, Andrew. "Growing a Research Culture." Address to the Academic Senate – University of Western Sydney, May, 2007. p. 5. [Accessed on 20th May 2014 – Online]http://www.uws.edu.au/__data/assets/pdf_file/0018/7119/Item _3.6_Building_a_Research_Culture__Ta bled_Doc.pdf

Clark, J. M. (2014) 'Guest editorial:Clinical academic leadership-moving the profession forward.' Journal of Research in Nursing, 19(2) pp. 98–101.

Cleary, M., Hunt, G. E. and Robertson, M. (2011) 'Editorial: Improving Research cultures in nursing.' Journal of Clinical Nursing, pp. 1213–1214.

Clifford, C. and Murray, S. (2001) 'Pre- and post-test evaluation of a project to facilitate research development in practice in a hospital setting.' Journal of Advanced Nursing, 36(5) pp. 685–695.

Closs, S. J. and Cheater, F. M. (1994) 'Utilization of nursing research: culture, interest, and support.' Journal Of Advanced Nursing, 19(4) pp. 762–773.

Coghlan, D. and Casey, M. (2001) 'Action research from the inside: Issues and challenges in doing action research in your own hospital.' Journal of Advanced Nursing, 35(5) pp. 674–682.

Cohen, L., Manion, L. and Morrison, K. (2011) Research Methods in Education. Education. 5th ed., London: Routledge Farmer.

Collis, J. and Hussey, R. (2003), Business Research: A Practical Guide for Undergraduate and Postgraduate Students, Palgrave Macmillan, Houndmills, Basingstoke, Hampshire.

Collins, J., Luckson, M., Holland, M., Dunkerley, J., Banerjee, M., Cruickshank, M et al (2006) Presentation at the Nurses Hypertension Association Annual Scientific Meeting 'An ASCOT site specific evaluation of efficacy and tolerability of a novel combination of two different formulations of doxazosin in uncontrolled hypertension.'

Conrad, P. (2008) 'To Boldly Go: A Partnership Enterprise to Produce Applied Health and Nursing Services Researchers in Canada.' Healthcare Policy, 3(Special Issue) pp. 13–30.

Cooke, A. and Green, B. (2000) 'Developing the research capacity of departments of nursing and midwifery based in higher education: a review of the literature.' Journal of advanced nursing, 32(1) pp. 57–65.

Cooke, J. (2005) 'A framework to evaluate Research Capacity Building in health care.' BMC family practice, 6 p. 44.

Cooke, J., Owen, J. and Wilson, A. (2002) 'Research and development at the health and social care interface in primary care: a scoping exercise in one National Health Service region.' Health & Social Care in the Community. Blackwell Science Ltd, 10(6) pp. 435–444.

Cooke, J., Nancarrow, S., Dyas, J. and Williams, M. (2008) 'An evaluation of the "Designated Research Team" approach to building research capacity in primary care.' BMC family practice, 9 p. 37.

Cooke, J., Nancarrow, S., Hammersley, V., Farndon, L. and Vernon,

W. (2006) 'The "Designated Research Team" approach to building research capacity in primary care.' Primary Health Care Research and Development, 7(1) pp. 78–86.

Cooper H (1998) Synthesising Research. 3rd ed., London: Sage.

Crabtree, B. F. and Miller, W. L. (1999) Doing Qualitative Research. Sage. 2nd ed., London: Sage.

Council of Deans for Health (2012) Clinical Academic Careers for Nursing, Midwifery and the Allied Health Professions, Council of Deans of Health position statement. (accessed 24th December 2015) http://tinyurl.com/nwmut5d

Creswell, J. W. (2003) 'Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.' Research design Qualitative quantitative and mixed methods approaches. Thousand Oaks, CA: Sage Publications p. 398.

Creswell, J. W. and Plano Clark, V. L. (2011) Designing and conducting mixed methods research. Applied Linguistics. 2nd ed., Thousand Oaks, CA: Sage.

Crotty, M. (1998) The Foundations of Social Research. The foundations of social research meanings and perspectives in the research process. London: Sage Publications.

Cummings, G. G., Estabrooks, C. A., Midodzi, W. K., Wallin, L. and Hayduk, L. (2007) 'Influence of organizational characteristics and context on research utilization.' Nursing Research, 56(4 Suppl) pp. S24–39.

Dahlof B, Sever PS, Poulter NR, Wedel H, Beevers DG, Caulfield M, Collins R, Kjeldsen SE, Kristinsson A, McInnes GT, Mehlsen J,

Nieminen M, O'Brien E, Ostergren J; ASCOT Investigators. Prevention of cardiovascular events with an antihypertensive regimen of amlodipine adding perindopril as required versus atenolol adding bendroflumethiazide as required, in the Anglo-Scandinavian Cardiac Outcomes Trial-Blood Pressure Lowering Arm (ASCOT-BPLA): a multicentre randomised controlled trial. Lancet 2005; 366:895-906

Daniels, L. (2002) 'A bright future for dietitians – where is the evidence?,' 59(1) pp. 29–37.

Davies, M. B. (2014) 'Doing a successful research project: using qualitative or quantitative methods'. 2nd ed. Basingstoke: Palgrave Macmillan.

DeLyser, D. (2001). 'Do you really live here?' Thoughts on insider research. Geographical Review, 91(1/2), 441-453.

Denscombe, M. (2007) The Good Research Guide. For Smallscale Research Projects. Buckingham: Open University Press.

Denzin, N. K. (1978) The research act: a theoretical introduction to sociological methods. New York: McGraw-Hill.

Denzin, N. K. and Lincoln, Y. S. (2000) Handbook of qualitative research. Handbook of Qualitative Research. 2nd ed., Thousand Oaks, CA: Sage.

Denyer, D., & Tranfield, D. (2009). Producing a systematic review. In D. A. Buchanan & A. Bryman (Eds.), 'The SAGE handbook of organizational research methods' (pp. 671–689). London: Sage Publications Ltd.

Department of Health (1991) 'Research for health. A research and development strategy for the NHS.' London: HMSO.

Department of Health (1993a) 'Research and Development. Towards an evidence-based health service.' London: HMSO.

Department of Health (1993b) 'Strategy for Research in Nursing, Midwifery and Health Visiting.' London: HMSO.

Department of Health (1994) 'Supporting research and development in the NHS. A report to the Minister for Health by a Research and Development Task Force chaired by Professor Anthony Culyer.' London: HMSO.

Department of Health (1997) 'New NHS: Modern, Dependable.' London: HMSO.

Department of Health (1998) 'A First Class Service: Quality in the new NHS.' London: HMSO.

Department of Health (1999) Strategic review of the NHS R&D Levy (The Clarke Report).

Department of Health (2000a) 'Research and development for a first class service. R&D funding in the new NHS.' London: HMSO.

Department of Health (2000b) Towards a Strategy for Nursing Research and Development. London: Department of Health.

Department of Health (2001) 'Governance Arrangements for Research Ethics Committees.' DoH. London: DOH.

Department of Health (2004a) 'NHS permission for Rand D involving NHS patients.' London: DOH.

Department of Health (2004b) 'Research for Patient Benefit Working Party :Final Report.' London: DOH pp. 1–32.

Department of Heallth (2004c) 'Research Capacity Development Strategy.' London: HMSO.

Department of Health (2005a) 'Report of the Ad Hoc Advisory Group on the operation of NHS research ethics committees.' London: DOH.

Department of Health (2005b) 'The Research Governance Framework for health and social care'. 2nd ed., London: DOH.

Department of Health (2006) 'Best Research for Best Health.' A New National Health Research Strategy. The NHS contribution to health research in England. pp. 11–315.

Department of Health (2010) Equity and excellence: liberating the NHS (White Paper). Stationery Office.

Department of Health (2012a) 'Developing the Role of the Clinical Academic Researcher in the Nursing, Midwifery and Allied Health Professions.' Leeds: DOH pp. 1–21.

Department of Health (2012 b) *'Health and Social Care Act 2012', c.7*. (Accessed: 8 January 2014).http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted

Department of Health (2013a) 'The NHS Constitution – the NHS belongs to us all.' London: DOH pp. 1–16.

Department of Health (2013b) Top NHS and university alliances recognised by Department of Health. [Online] [Accessed on 17th April 2015] https://www.gov.uk/government/news/top-nhs-and-university-alliances-recognised-by-department-of-health.

Department of Health (2015) '2010 to 2015 government policy: research and innovation in health and social care.' London: DOH.

Dillman, D. A., Smyth, J. D. and Christian, L. M. (2008) Internet, mail, and mixed-mode surveys: The tailored design method. New Jersey: John Wiley & Sons, Inc.

Dunleavy, P. (1988) Studying for a Degree in the Humanities and Social Sciences. Palgrave Macmillan.

Dwyer, S. C. and Buckle,J.L.(2009). "The Space Between: On Being an Insider-Outsider in Qualitative Research." International Journal of Qualitative Methods 8:54–63.

Easterby-Smith, M. P. V, Thorpe, R. and Lowe, A. (2001) 'Management Research: An Introduction.' London: Sage publication.

Edwards, P., Roberts, I., Clarke, M., DiGuiseppi, C., Pratap, S., Wentz, R. and Kwan, I. (2002) 'Increasing response rates to postal questionnaires: systematic review.' British Medical Journal (Clinical research ed.), 324(7347) p. 1183.

Estabrooks, C. A. (1999) 'The conceptual structure of research utilization.' Research in nursing & health, 22(3) pp. 203–216.

Farmer, E. and Weston, K. (2002) 'A conceptual model for capacity building in Australian primary health care research.' Aust Fam Physician, 31(12) pp. 1139–1142.

Field P and Morse J (1985) Nursing Research: Application of Qualitative Approaches.London: Chapman and Hall.

Finch, E., Cornwell, P., Ward, E. C. and McPhail, S. M. (2013) 'Factors influencing research engagement: research interest,

confidence and experience in an Australian speech-language pathology workforce.' BMC health services research, 13 p. 144.

Fink, R., Thompson, C. J. and Bonnes, D. (2005) 'Overcoming barriers and promoting the use of research in practice.' The Journal of nursing administration, 35(3) pp. 121–129.

Fischbacher, C., Chappel, D., Edwards, R. and Summerton, N. (2000) 'Health surveys via the Internet: quick and dirty or rapid and robust?' Journal of the Royal Society of Medicine, 93(7) pp. 356–359.

Fitzpatrick, S. (2013) 'A Survey of Staffing Levels of Clinical Academic UK Medical I Schools as at 31 July 2012,' (July 2012), London: Medical Schools Council.

Francis R (2010) 'Independent Inquiry into Care Provided by Mid Staffordshire NHS Foundation Trust: January 2005 – March 2009: Volume 1.' London: The Stationery office.

Francis R (2013) 'Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry.' London: The Stationery office.

Fraser D (1997) Ethical dilemmas and practical problems for the practitioner researcher. Educational Action Research, 5, 1, 161-171.

Frontera, W. R., Fuhrer, M. J., Jette, A. M., Chan, L., Cooper, R. A., Duncan, P. W., Kemp, J. D., Ottenbacher, K. J., Peckham, H. P., Roth, E. J. and Tate, D. G. (2005) 'Rehabilitation medicine summit: building research capacity.' Topics in stroke rehabilitation pp. 68–80.

Funk, S.G., Champagne, M.T., Weiss, R.A., Tornquist, E.M. Barriers: The barriers to research utilization scale.Appl Nurs Res. 1991;4:39–45.

Gale, N. K., Heath, G., Cameron, E., Rashid, S. and Redwood, S. (2013) 'Using the framework method for the analysis of qualitative

data in multi-disciplinary health research.' BMC medical research methodology, 13(1) p. 117.

Garfield, E. (2006) 'The history and meaning of the journal impact factor.' JAMA : the journal of the American Medical Association, 295(1) pp. 90–93.

Gasman, M and Payton-Stewart,L (2006). "Twice Removed: A White Scholar Studies the History of Black Sororities and a Black Scholar Responds." International Journal of Research & Method in Education 29:129–49.

Gerrish, K. and Lathlean, J. (2015) 'The future of nursing.' In Gerrish, K. and Lacey A (eds) The Research Process in Nursing. 7th ed., Oxford: John Wiley & Sons Ltd.

Gillon, R. (1994) 'Medical ethics: four principles plus attention to scope.' BMJ (Clinical research ed.), 309(6948) pp. 184–188.

Girot (Rosser), E. (2013) 'Shaping clinical academic careers for nurses and allied health professionals: the role of the educator.' Journal of Research in Nursing , 18 (1) pp. 51–64.

Girvin, J and Hayter, M (2013) 'Why the NHS needs more graduate nurses.' The Guardian. http://www.theguardian.com/healthcare-network/2013/aug/20/need-graduate-nurses-nhs.Accessed on 17Mar 2015

Golenko, X., Pager, S. and Holden, L. (2012a) 'A thematic analysis of the role of the organisation in building allied health research capacity: a senior managers' perspective.' BMC Health Services Research. BMC Health Services Research, 12(1) p. 276.

Gray, D. E. (2004) Doing Research in the Real World. Book.

Gray, D. E. (2013) Doing Research in the Real World. London; Thousand Oaks; New Delhi.: SAGE Publications.

Green, L. (2011) 'Explaining the role of the nurse in clinical trials.' nursing standard, 25(22) pp. 35–39.

Greene,M,J. (2014) On the Inside Looking In: Methodological Insights and Challenges in Conducting Qualitative Insider Research The Qualitative Report Volume 19, How To Article 15, 1-13 http://www.nova.edu/ssss/QR/QR19/greene15.pdf

Gubrium, J. F. and Holstein, J. A. (2002) Handbook of Interview Research: Context and Method. London: SAGE Publications .

Halcomb, E. J. and Davidson, P. M. (2006) 'Is verbatim transcription of interview data always necessary?' Applied Nursing Research pp. 38–42.

Halcomb, E. J., Gholizadeh, L., DiGiacomo, M., Phillips, J. and Davidson, P. M. (2007) 'Literature review: considerations in undertaking focus group research with culturally and linguistically diverse groups.' Journal of Clinical Nursing. Blackwell Publishing Ltd, 16(6) pp. 1000–1011.

Halcomb, E. J., Andrew, S. and Brannen, J. (2009) 'Introduction to Mixed Methods Research for Nursing and the Health Sciences.' In Mixed Methods Research for Nursing and the Health Sciences. Wiley-Blackwell, pp. 1–12.

Ham C (2009). Health in a Cold Climate. London: The Nuffield Trust

Hammersley, M. (1987) 'Some Notes on the Terms "Validity" and "Reliability" British Educational Research Journal. Blackwell Publishing Ltd, 13(1) pp. 73–82.

Hammersley, M. (2000) Taking Sides in Social Research. Essays on Partisanship and Bias, London: Routledge.

Hanover research (2014) Building a Culture of Research: Recommended Practices: Accessed on 12th May 2014 http://www.hanoverresearch.com/media/Building-a-Culture-of-Research-Recommended-Practices.pdf

Happell, B. (2008) 'Barriers to implementing a Nursing Clinical Development Unit.' Contemporary nurse : a journal for the Australian nursing profession, 29(1) pp. 53–59.

Hassanein, R. S. (1988) 'Barriers to research in allied health.' Journal of Allied Health, 17(3) pp. 175–187.

Hauter, J. (1993) The smart woman's guide to Career Success. Hawthorn,NJ: Career Press.

Health and Social care Information (n.d.) NHS Workforce Statistics - December 2014, Provisional statistics. (Accessed on 30th March 2015)http://www.hscic.gov.uk/searchcatalogue?productid=17373&topics=0/Workforce&sort=Relevance&size=10&page=1#top.

Health Career (n.d.) Nurse Researcher. (Accessed on 12th March 2015) http://explorehealthcareers.org/en/Career/148/Nurse_Researcher.

Health Education England (2014) 'Developing a flexible workforce that embraces research and innovation Research and Innovation Strategy.' London: HEE.

Health Education England (2015a) Clinical academic careers. [Online] [Accessed on 14th February 2015] http://hee.nhs.uk/work-programmes/clinical-academic-careers/.

HEE Business plan (Accessed on 12th August 2015) http://hee.nhs.uk/wp-content/uploads/sites/321/2014/05/HEE-Bus-Plan-interactive-final.pdf

Health Research Authority (2013) 'Defining research.' London: HRA.

Hicks, C. (1995) A study of nurse managers' constructs of nurse researchers. Journal of nursing management.

Hicks, C. (1996) 'A study of nurses' attitudes towards research: a factor analytic approach.' Journal of advanced nursing, 23(2) pp. 373–379.

Higher Education Funding Council for England (HEFCE) (2001) Research in nursing and allied health professions. Report of the Task Group 3 to HEFCE and the Department of Health.

Hill, R. (1999) 'Revisiting the term "Research culture."' Higher Education Research and Development (HERD), (July) pp. 12–15.

Hirsch, J. E. (2005) 'An index to quantify an individual's scientific research output.' Proceedings of the National Academy of Sciences of the United States of America, 102(46) pp. 16569–16572.

Hirsch, J. E. (2007) 'Does the H index have predictive power?' Proceedings of the National Academy of Sciences of the United States of America, 104(49) pp. 19193–19198.

Hockey, J. (1993) Research methods – researching peers and familiar settings,Research Papers in Education, 8 (2), 199-225.

Hofstede, G. (2001) Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organization s ,Across Nations. 2nd ed., Thousand Oaks,California: Sage Publications.

Holden, L., Pager, S., Golenko, X. and Ware, R. S. (2012a) 'Validation of the research capacity and culture (RCC) tool: Measuring RCC at individual, team and organisation levels.' Australian Journal of Primary Health, 18(1) pp. 62–67.

Holden, L., Pager, S., Golenko, X., Ware, R. S. and Weare, R. (2012b) 'Evaluating a team-based approach to Research Capacity Building using a matched-pairs study design.' BMC Family Practice. BioMed Central Ltd, 13(1) p. 16.

House of Lords Select Committee on Science and Technology (1988) 'Priorities in medical research.' London: HMSO.

Howard, A. J., Ferguson, M., Wilkinson, P. and Campbell, K. L. (2013) 'Involvement in research activities and factors influencing research capacity among dietitians.' Journal of Human Nutrition and Dietetics, 26(SUPPL.1) pp. 180–187.

Hurst, K. (2003) 'Building a research conscious workforcenull.' Journal of Health Organization and Management. Emerald, 17(5) pp. 373–384.

Hussein, A. (2009) 'The use of Triangulation in Social Sciences Research : Can qualitative and quantitative methods be combined?' Journal of Comparative Social Work, 1 pp. 1–12.

Ilott, I. and Bury, T. (2002) 'Research capacity: A challenge for the therapy professions.' Physiotherapy, 88(4) pp. 194–200.

Jackson, D. (2005) 'Building research by community.' Journal of Advanced Nursing. Blackwell Science Ltd, 50(3) pp. 229–230.

Jackson, D. (2008) 'Servant Leadership in Nursing: A framework for developing sustainable research capacity in nursing.' Collegian, 15(1) pp. 27–33.

Jenerette, C. M., Funk, M., Ruff, C., Grey, M., Adderley-Kelly, B. and McCorkle, R. (2008) 'Models of inter-institutional collaboration to build research capacity for reducing health disparities.' Nursing Outlook, 56(1) pp. 16–24.

Jick, T. D. (1979) 'Mixing Qualitative and Quantitative Methods : Triangulation in Action.' Administrative Science Quarterly, 24(4) pp. 602–611.

Joffres, C., Heath, S., Farquharson, J., Barkhouse, K., Latter, C. and MacLean, D. R. (2004) 'Facilitators and challenges to organizational capacity building in heart health promotion.' Qualitative health research, 14(1) pp. 39–60.

Johansson, J. K. (2000) Global marketing. 2nd ed., New York: McGraw-Hill.

Jones, T. L. (2010) 'A Holistic Framework for Nursing Time: Implications for Theory, Practice, and Research.' Nursing forum, 45(3) pp. 185–196.

Jootun, D. and McGhee, G. (2003) 'Creating a Research culture in a nursing school.' nursing standard, 18(3) pp. 33–36.

Jowett, S. M., Macleod, J., Wilson, S. and Hobbs, F. D. R. (2000) 'Research in primary care: Extent of involvement and perceived determinants among practitioners from one English region.' British Journal of General Practice, 50(454) pp. 387–389.

Kanuha, V. K. (2000) "Being" native versus "going native"; conducting social work research as an insider, Social Work, 45(5) 439-447.

Kelle, U. and Erzberger, C. (2004) qualitative and quantitative methods: Not in Opposition. A Companion to Qualitative Research,. eds., London: Sage.

Keogh (2013) 'Review into the quality of care and treatment provided by 14 hospital trusts in England: overview report.' Hm Govt, (July) pp. 1–61.

Kim, M. J. (2009) 'Clinical academic research careers in nursing: towards global nursing.' Journal of Research in Nursing , 14 (2) pp. 125–132.

Kimchi, J., Polivka, B. And Stevenson, J. S. (1991) 'Triangulation: Operational Definitions.' Nursing Research, 40(6) pp. 364–6.

Kitson, A., Harvey, G. and McCormack, B. (1998) 'Enabling the implementation of evidence based practice: a conceptual framework.' Quality in health care : QHC, 7(3) pp. 149–158.

Klein, R. (2001) The New Politics of the National Health Service. 4th ed., Prentice Hall (Pearson Education).

Krueger, R. A. and Casey, M. A. (2000) Focus groups: A practical guide for applied research. Review Literature And Arts Of The Americas.

Latter, S., Clark, J. M., Geddes, C. and Kitsell, F. (2009) 'Implementing a clinical academic career pathway in nursing; criteria for success and challenges ahead.' Journal of Research in Nursing , 14 (2) pp. 137–148.

Lazzarini, P.A, Geraghty, J., Kinnear, E. M., Butterworth, M. and Ward, D. (2013) 'Research capacity and culture in podiatry: early observations within Queensland Health.' Journal of foot and ankle research, 6(1) p. 1.

Leedy, P. D. and Ormrod, J. E. (2015) Practical Research: Planning and Design. New York: Pearson Education.

Lizarondo, L., Grimmer-Somers, K. and Kumar, S. (2011) 'A systematic review of the individual determinants of research

evidence use in allied health.' Journal of multidisciplinary healthcare, 4 pp. 261–272.

Loke, J. C. F., Laurenson, M. C. and Lee, K. W. (2014) 'Embracing a culture in conducting research requires more than nurses' enthusiasm.' Nurse Education Today. Elsevier Ltd, 34(1) pp. 132–137.

Luckson, M (2000). : Anemia in pregnancy among pregnant women attending the antenatal clinic of All India Institute of Medical Science. B.Sc Dissertation, AIIMS. (Unpublished)

Luckson, M., Collins, J.,   Holland, M., Dunkerley, J., Banerjee, M., Cruickshank, M)   (2006a) Presentation at the Nurses Hypertension Association Annual Scientific Meeting an ASCOT site specific evaluation of efficacy and tolerability of Amlodipine and Diltiazem in hypertension.'

Luckson, M (2006b): The nutritional care of patients by nurses in an adult medical ward, Central Manchester University Hospitals NHS Foundation trust.M Sc Dissertation.University Of Manchester (Unpublished)

Luckson, M (2008a). BHS annual scientific conference: Chair for the abstract presentation by Nurses (Unpublished)

Luckson, M(2008b). Taking Blood pressure. Practice Nurse 2008.Apr 35(8): 19-22

Luckson, M (2009a). BHS annual scientific conference: Chair for the abstract presentation by Nurses (Unpublished)

Luckson, M. (2009b) Managing chronic heart failure. Practice Nurse February 39-44.

Luckson (2009c) Blood pressure measurement workshop: Invited speaker for BPA Programme: One day advanced training on hypertension. 27 February 2009, Manchester Dental Education and Conference Centre.

Luckson, M. (2010) Hypertension management in older people. British Journal of Community Nursing. January 15(1): 17 – 21.

MacIntosh, J. A. (1993) 'Focus groups in distance nursing education.' Journal of advanced nursing, 18(12) pp. 1981–1985.

MacLean, L. M., Meyer, M. and Estable, A. (2004) 'Improving accuracy of transcripts in qualitative research.' Qualitative health research, 14(1) pp. 113–123.

Manor, M.M. and Myers, E.F. (2003). Research and the dietetics profession: Making a bigger impact. J Am Diet Assoc.;103:108–112.

Mant D (1997) 'National working party on R&D in primary care final report.' London: NHSE: South and West.

Marshall, P. (1997) Research Methods: How to Design and Conduct a Successful Project. Oxford: How to Books.

May, T. (1997) Social Research: Issues, Methods and Process , Buckingham: Open University Press, 2nd edn.

Merton, Robert.(1972). "Insiders and Outsiders: A Chapter in the Sociology of Knowledge." American Journal of Sociology 78:9–47.

McCance, T. V., Fitzsimons, D., Keeney, S., Hasson, F. and McKenna, H. P. (2007) 'Capacity building in nursing and midwifery research and development: An old priority with a new perspective.' Journal of Advanced Nursing, 59(1) pp. 57–67.

McColl, E., Jacoby, A., Thomas, L., Soutter, J., Bamford, C., Steen, N., Thomas, R., Harvey, E., Garratt, A. and Bond, J. (2001) 'Design

and use of questionnaires: A review of best practice applicable to surveys of health service staff and patients.' Health Technology Assessment.

McCormack, B. (2003) 'A conceptual framework for person-centred practice with older people.' International Journal of Nursing Practice. Blackwell Science Pty, 9(3) pp. 202–209.

McCormack, B., McCarthy, G., Wright, J., Slater, P. and Coffey, A. (2009) 'Development and testing of the Context Assessment Index (CAI).' Worldviews on Evidence-Based Nursing, 6(1) pp. 27–35.

McCracken, G. (1988) 'The long interview.' In The long interview. California: Sage Publications, pp. 28–53.

McKenna,H and Mason,C (1998)"Nursing and the wider R&D agenda: influence and contribution, "Journal of Research in Nursing, 3(2), pp. 108–115.

McIntyre, E., Brun, L. and Cameron, H. (2011) 'Researcher development program of the primary health care research, evaluation and development strategy.' Australian Journal of Primary Health, 17(1) pp. 114–121.

McLean, S. A. and Feldman, J. A. (2001) 'The impact of changes in HCFA documentation requirements on academic emergency medicine: results of a physician survey.' Academic emergency medicine : official journal of the Society for Academic Emergency Medicine, 8(9) pp. 880–885.

McMahon, A. (2000) Proposals for Action : Towards a Strategy for Nursing Research & Development: Proposals for Action .In   Royal College of Nursing. [Accessed on 18th April 2015] www.rcn.org.uk/__data/assets/word_doc/0003/.../towardsstrategy.do c.

McMahon, A. (2008) 'The politics of innovation: a critical analysis of the conditions in which innovations in health care may flourish.' PhD Thesis,University of Salford.

McMahon, A., Bishop, V. and & Shaw, T. (2000) 'Nurse Executive Directors Making a Difference: Report of a Workshop.' In Royal College of Nursing Annual Nursing Research Conference, p. Recommendation Number ix, page 11.

McMahon, A. and Lacey A (2010) 'The Future of Nursing Research.' In Gerrish, K. and Lacey, A. (eds) The Research Process in Nursing. 6th ed., Oxford: John Wiley & Sons.

McNamara, J. F. (1994). Surveys and Experiments in Education Research. Lancaster, PA: Technomic Publishing.

McNicholl, M. P., Coates, V. and Dunne, K. (2008) 'Driving towards an improved research and development culture.' Journal of Nursing Management, 16(3) pp. 344–351.

McSherry, R., Artley, A., & Holloran, J. (2006). Research Awareness: An Important Factor for Evidence-Based Practice? Worldviews on Evidence-Based Nursing, 3(3), 103–115.

Medical Schools Council (2011) Staffing Levels of Medical Clinical Academics in UK Medical Schools as at 31 July 2010. A report by the Medical Schools Council. http://tinyurl.com/oo8aq5x (accessed 24th December 2015)

Meyer, J., Johnson, B., Procter, S., Bryar, R. and Rozmovits, L. (2003) 'Practitioner research: Exploring issues in relation to research capacity-building.' Nursing Times Research , 8 (6) pp. 407–417.

Moore, A. P. (1997) 'Research, the collaborative approach: Clinicians and academics.' Physiotherapy, 83(5) pp. 229–234.

Moore, J., Crozier, K. and Kite, K. (2012) 'An action research approach for developing research and innovation in nursing and

midwifery practice: Building research capacity in one NHS foundation trust.' Nurse Education Today. Elsevier Ltd, 32(1) pp. 39–45.

Moore, S. A., Severn, R. C. and Millar, R. (2006) 'A conceptual model of community capacity for biodiversity conservation outcomes.' Geographical Research, 44(4) pp. 361–371.

Murray, L. and Lawrence, B. (2000) Practitioner-Based Enquiry: Principles for Postgraduate Research. London: Routledge.

Naylor, G. (2015) 'Nursing student placements in clinical research.' nursing standard, 29(2) pp. 37–43.

Naples, N. A. (1996). The outsider phenomenon. In C. D. Smith & W. Kornblum (Eds.), In the field: Readings on the field research experience (2nd ed., pp. 139-149).Westport, CT: Praeger.

Nesbary, D. . (2000) Survey Research and the World Wide Web. Massachusetts: Allyn & Bacon Press.

NHS England (2013) 'Research is everybody's business: NHS England R&D Strategy 2013-2018' pp. 2013–2018.

NIHR (2013) 'Mystery shopper.' Leeds: NIHR pp. 1–4.

NIHR (2014) research workforce. [Online] [Accessed on 25th March 2015] http://www.crn.nihr.ac.uk/wp-content/uploads//National case studies/Rise of the CR workforce_Insight_Autumn2014.pdf.

NIHR (2015a) Biomedical Research Centres. [Online] [Accessed on 21st April 2015] http://www.nihr.ac.uk/about/biomedical-research-centres.htm.

NIHR (2015b) Collaborations for Leadership in Applied Health Research and Care (CLAHRCs). [Online] [Accessed on 14th February 2015] http://www.nihr.ac.uk/about/collaborations-for-leadership-in-applied-health-research-and-care.htm.

NIHR (2015c) ICA HEE/NIHR Integrated Clinical Academic Programme for non-medical healthcare professions. [Online] [Accessed on 27th March 2015] http://www.nihr.ac.uk/funding/nihr-hee-cat-programme.htm.

NIHR (2015d) Structure of the NHS. [Online] [Accessed on 10th March 2015] http://www.nihr.ac.uk/about/structure.htm.

NIHR (2015e) The Clinical Research Network. [Online] [Accessed on 26th March 2015] http://www.crn.nihr.ac.uk/.

NIHR (n.d.) ICA HEE/NIHR Integrated Clinical Academic Programme for non-medical healthcare professions. [Online] [Accessed on 11th April 2015] http://www.nihr.ac.uk/funding/nihr-hee-cat-programme.htm.

North American Primary Care Research Group Committee on Building Research Capacity and the Academic Family Medicine Organisations Research Sub-Committee (2002) 'What does it mean to build research capacity?' Family Medicine, (34) pp. 678–684.

Nursing and Midwifery Council (2008) 'Standards to Support Learning and Assessment in Practice: NMC Standards for Mentors, Practice Teachers and Teachers.' London: NMC p. 85.

Nursing and Midwifery Council (2010) 'Standards for pre-registration nursing education.' London: NMC.

Nursing and Midwifery Council (2013) 'NMC response to the Francis report.' PET clinics. NMC pp. v–vii.

Offredy, M. and Vickers, P. (2010) Developing a Healthcare Research Proposal: An Interactive Student Guide. West Sussex: John Wiley & Sons.

Olsen, W. (2004) 'Triangulation in Social Research: Qualitative and Quantitative Methods Can Really Be Mixed.' In Developments in Sociology, pp. 1–30.

O'Neill, F. (2015) 'Developing Clinical Research Competence in the Undergraduate Nurse Workforce Report and recommendations from the NIHR Clinical.' Leeds: NIHR.

Orme, J. and Powell, J. (2008) 'Building Research Capacity in Social Work: Process and Issues.' British Journal of Social Work , 38 (5) pp. 988–1008.

Oxford Dictionary (2015a).Definijstion of Capability http://www.oxforddictionaries.com/definition/english/capacity(Accessed on 24/12/2015).

Oxford Dictionary(2015b) Definition of Capacity..http://www.oxforddictionaries.com/definition/english/capability(Accessed on 24/12/2005)

Pager, S., Holden, L. and Golenko, X. (2012) 'Motivators, enablers, and barriers to building allied health research capacity.' Journal of Multidisciplinary Healthcare, 5 pp. 53–59.

Patel, V. M., Ashrafian, H., Ahmed, K., Arora, S., Jiwan, S., Nicholson, J. K., Darzi, A. and Athanasiou, T. (2011) 'How has healthcare research performance been assessed?: a systematic review.' J R Soc Med, 104(6) pp. 251–261.

Patton, M. Q. (2002) 'Qualitative research and evaluation methods.' In Qualitative Inquiry. 3rd ed., London; Thousand Oaks; New Delhi.: Sage Publications, p. 598.

Perkins, D. A., Barclay, L., Browne, K. M., Blunden, L.-A., Fragar, L. J., Kelly, B. J., Lower, T., Lyle, D. M., Saberi, V., Stain, H. J. and Sidford, J. R. (2011) 'The Australian Rural Health Research Collaboration: building collaborative population health research in

rural and remote NSW.' NSW Public Health Bulletin, 22(1-2) pp. 23–26.

Perry, L., Grange, A., Heyman, B. and Noble, P. (2008a) 'Stakeholders' perceptions of a research capacity development project for nurses, midwives and allied health professionals.' Journal of Nursing Management, 16(3) pp. 315–326.

Petsko, G. A. (2008) 'Having an impact (factor).' Genome biology, 9(7) p. 107.

Pickstone, C., Nancarrow, S., Cooke, J., Vernon, W., Mountain, G., Boyce, R. A. and Campbell, J. (2008) 'Building Research Capacity in the Allied Health Professions.' Evidence and Policy, 4 pp. 53–68.

Pighills, A. C., Plummer, D., Harvey, D. and Pain, T. (2013) 'Positioning occupational therapy as a discipline on the research continuum: Results of a cross-sectional survey of research experience.' Australian Occupational Therapy Journal, 60(4) pp. 241–251.

Poland, B. D. (1995) 'Transcription Quality as an Aspect of Rigor in Qualitative Research.' Qualitative Inquiry pp. 290–310.

Polit, D. F. and Beck, C. T. (2013) Essentials of Nursing Research: Appraising Evidence for Nursing Practice. 8th ed., Philadelphia, USA.: Wolters Kluwer Health.

Pope, C. and Mays, N. (2007) 'Synthesising Qualitative Research.' In Qualitative Research in Health Care: Third Edition, pp. 142–152.

Porter-O'Grady, T., & Finnegan, S. (1984). Shared Governance for Nursing. Rockville, MD: Aspen Publishers.

Powney J (1988) 'Structured eaves dropping.Research Intelligence.' Journal of the british education research foundation, 28 pp. 10–12.

Pratt, M., Margaritis, D., and Coy, D. (1999). Developing a research culture in a university faculty. Journal of Higher Education Policy and Management, 21(1), 43-55.

Preedy, M. and Riches, C. (1988) Practitioner research in school management: an analysis of research studies undertaken for an Open University course, in: J. Nias and S. Groundwater-Smith (Eds) The enquiring teacher: supporting and sustaining teacher research, Lewes: Falmer PresS..

Probst, H., Harris, R., McNair, H. A., Baker, A., Miles, E. A. and Beardmore, C. (2015) 'Research from therapeutic radiographers: An audit of research capacity within the UK.' Radiography. Elsevier, 21(2) pp. 112–118.

Rafferty, A. M. and Traynor, M. (2003a) 'Quality of care in early nursing research.' Journal of Health Services Research and Policy, 8(2) pp. 118–119.

Rafferty A.-M. & Traynor M (2003b) 'Guest editorial: where next for nursing research?' Nursing Times Research, 8(6) pp. 396–397.

Ramkalawan, T. and Dieppe, P. (2008) 'Research capacity development and training.' Journal of Health Services Research & Policy , 13 (suppl 3) pp. 6–11.

Redwood, S. (2005) 'Colliding discourses: Deconstructing the process of seeking ethical approval for a participatory evaluation project .' Journal of Research in Nursing , 10 (2) pp. 217–230.

Reid S(2004). Monitoring the effect of the new rural allowance for health professionals. Durban: Health Systems Trust, 1–7.

Ried, K., Farmer, E. A. and Weston, K. M. (2006) 'Setting directions for capacity building in primary health care: a survey of a research network.' BMC family practice, 7 p. 8.

Ried, K., Farmer, E. A. and Weston, K. M. (2007) 'Bursaries, writing grants and fellowships: a strategy to develop research capacity in primary health care.' BMC family practice, 8 p. 19.

Ried, K. and Fuller, J. (2005) 'Building a culture of research dissemination in primary health care: the South Australian experience of supporting the novice researcher.' Australian health review : a publication of the Australian Hospital Association, 29(1) pp. 6–11.

Ritchie, J. and Spencer, L. (1994) 'Qualitative Data Analysis for Applied Policy Reasearch.' In Bryman and Burgess (ed.) The Qualitative Researcher's Companion. London: Routledge, pp. 173–194.

Ritchie, J. and Lewis, J.(2003) Qualitative Research Practice: A Guide for Social Science Students and Researchers. Qualitative Research Practice: A Guide for Social Science Students and Researchers. London; Thousand Oaks; New Delhi.: Sage Publications.

Rizzo Parse, R. (2007) 'Building a Research culture.' Nursing Science Quarterly, 20(3) p. 197.

Robinson, J. (1999) 'Taking the initiative: supporting nursing research in an acute trust.' Nurse Res pp. 41–50.

Robson, C. (2002) Real World Research: A Resource for Social Scientists and Practitioner--Researchers, Massachussetts: Blackwell Publishers.

Rosser, W., Godwin, M. and Seguin, R. (2010) 'Family medicine Research Capacity Building : five-weekend programs in Ontario.' Canadian family physician Medecin de famille canadien, 56(3) pp. e94–e100.

Rossman, G., and B. Wilson 1991 Numbers and Words Revisited: Being "Shamelessly Eclectic." Evaluation Review 9(5):627–643.

Royal College of Nursing (2014) RCN Knowledge and Innovation Action Plan 2014 - 2018. (Accessed on 23/7/2015) http://www.rcn.org.uk/development/research_and_innovation/rcnkno wledgeandinnovationactionplan/objectives_and_actions.

Sandelowski M (1986) The problem of rigour in qualitative research. Advances In Nursing Science. 8, 3, 27-37.

Sarre G(2002). Capacity and activity in research project (CARP): supporting R&D in primary care trusts.

Sarre, G. and Cooke, J. (2009) 'Developing indicators for measuring Research Capacity Development in primary care organizations: A consensus approach using a nominal group technique.' Health and Social Care in the Community, 17(3) pp. 244–253.

Saunders, M., Lewis, P. and Thornhill, A. (2009) Research Methods for Business Students. Research methods for business students. New York: Financial Times/ Prentice Hall.

Schein, E. H. (1993) 'How Can Organizations Learn Faster? The Challenge of Entering the Green Room.' Sloan Management Review, 34(2) p. 85.

Schein, E. H. (2004) Organizational Culture and Leadership. Leadership. 3rd ed., New Jersey: John Wiley & Sons.

Scott-Findlay, S. and Golden-Biddle, K. (2005) 'Understanding how organizational culture shapes research use.' The Journal of nursing administration, 35(7-8) pp. 359–65.

Seale, C. and Silverman, D. (1997) 'Ensuring rigour in qualitative research.' The European Journal of Public Health, 7(4) pp. 379–384.

Segrott, J., McIvor, M. and Green, B. (2006a) 'Challenges and strategies in developing nursing research capacity: A review of the literature.' International Journal of Nursing Studies pp. 637–651.

Selig, P. M., Estes, T. S. and Nease, B. (2009) 'Developing an Evidence-Based Practice Fellowship Program.' Newborn and Infant Nursing Reviews, 9(2) pp. 99–101.

Serrant-Green, L. (2002). Black on black: Methodological issues for black researchers working in minority ethnic communities. Nurse Researcher, 9(4), 30-44.

Serrant-Green, L. (2005) 'Breaking traditions: Sexual health and ethnicity in nursing research: A literature review.' Journal of Advanced Nursing pp. 511–519.

Shera, W. (2008) 'Changing Organizational Culture to Achieve Excellence in Research.' Social Work Research, 32(4) pp. 275–280.

Short, A., Jackson, W. and Nugus, P. (2010) 'Expanding clinical research capacity through a community of practice (CoPER).' Nurse Education in Practice, 10(1) pp. 52–56.

Silverman, D. (2013) Doing qualitative research: A practical handbook. London, Sage.

Smith, H., Wright, D., Morgan, S., Dunleavey, J. and Moore, M. (2002) 'The "Research Spider": a simple method of assessing research experience.' Primary Health Care Research and Development, 3(3) pp. 139–140.

Smith, J. and Firth, J. (2011) 'Qualitative data analysis: the framework approach.' Nurse researcher, 18(2) pp. 52–62.

Smith, L. F. (1997) 'Research general practices: what, who and why?' The British journal of general practice : the journal of the Royal College of General Practitioners, 47(415) pp. 83–86.

Smith, L. M. and Kleine, P. F. (1986) 'Qualitative research and evaluation: Triangulation and multimethods reconsidered.' New Directions for Program Evaluation. Wiley Subscription Services, Inc., A Wiley Company, 1986(30) pp. 55–71.

Snelgrove, S. and James, M. (2011) 'Graduate nurses' and midwives' perceptions of research.' Journal of Research in Nursing, 16(1) pp. 7–20.

Spence, K. (2014) 'O-142 A Clinical Neonatal Nursing Research Fellowship: Linking Research To Practice.' Archives of Disease in Childhood , 99 (Suppl 2) pp. A78–A78.

Stephens, D., Taylor, N. F., Taylor, N. and Leggat, S. G. (2009) 'Research experience and research interests of allied health professionals.' Journal of allied health, 38(4) pp. e107–11.

Stetler, C.B. (2003) 'Role of the organization in translating research into evidence-based practice.' Outcomes Management, 7(3) pp. 97–103.

Stineman, M. and Kennedy, B. (2005) 'Response to "Metrics of rehabilitation research capacity": within and beyond our borders.' American journal of physical medicine & rehabilitation / Association of Academic Physiatrists, 84(12) pp. 1020–1033.

Symon, G. and Cassel, C. (1998) Qualitative methods and analysis in organizational research. Thousand Oaks, CA: Sage.

Tanner, J. and Hale, C. (2002) 'Research-active nurses' perceptions of the barriers to undertaking research in practice.' Nursing Times Research , 7 (5) pp. 363–375.

Tashakkori, A., and Teddlie C. 2003 Handbook of Mixed Methods in Social and Behavioral Research. Thousand Oaks, CA: Sage.

Tesch, R. (1990) Qualitative Research: Analysis Types and Software Tools. Australian And New Zealand Journal Of Sociology. New York: Falmer.

The National Advisory Group on and Safety of Patients in England (2013) 'A promise to learn – a commitment to act Improving the Safety of Patients in England.' London: DOH p. 46.

Thurmond, V. A. (2001) 'The point of triangulation.' Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing / Sigma Theta Tau, 33(3) pp. 253–258.

Trostle J (1992) 'Research Capacity Building and international health: Definitions, evaluations and strategies for success.' Social Science and Medicine, 35 pp. 1321–1324.

Tuckman, B. W. (1972) Conducting Educational Research. New York: Hardcourt Brach Jovanovich.

United Kingdom Clinical Research Collaboration (2007) Developing the Best Research Professionals. Report of the UKCRC Subcommittee for Nurses in Clinical Research (Workforce). London: UKCRC. (Accessed on 12, March2015)www.ukcrc.org/index. aspx?o=1514

UK Clinical Research Collaboration (2009) Developing the best research professionals. London: UK Clinical Research Collaboration.

Uys, H. H. M. and Basson, A. A. (1991) Research Methodology in Nursing. Cape Town: Kagiso.

Van Gelder, M. M. H. J., Bretveld, R. W. and Roeleveld, N. (2010) 'Web-based questionnaires: The future in epidemiology?' American Journal of Epidemiology, 172(11) pp. 1292–1298.

Wagner, A., McElligott, J., Wagner, E. and Gerber, L. (2005) 'Measuring rehabilitation research capacity: report from the AAPM&R Research Advisory Committee.' American Journal of Physical Medicine & Rehabilitation, 84(12) pp. 955–968.

Waine, M., Magill-Evans, J. and Pain, K. (1997) 'Alberta occupational therapists' perspectives on and participation in research.' Canadian Journal of Occupational Therapy, 64(2) pp. 82–88.

Wallen, N. E. and Fraenkel, J. R. (2013) Educational Research: A Guide To the Process. New Jersey: Taylor & Francis.

Walker, K. (1994). Research with/in nursing:'troubling'the field. Contemporary nurse, 3(4), 162-168

Watson, B., Clarke, C., Swallow, V. and Forster, S. (2005) 'Exploratory factor analysis of the research and development culture index among qualified nurses.' Journal of Clinical Nursing, 14(9) pp. 1042–1047.

Webb, E. J., Campbell, D. T., Schwartz, R. D., and Sechrest, L. (1966). Unobtrusive Measures: Nonreactive Measures in the Social Sciences. Chicago: Rand McNally.

Weiss, A. P. (2007) 'Measuring the impact of medical research: Moving from outputs to outcomes.' American Journal of Psychiatry pp. 206–214.

Whitford, D. L., Walker, C., Jelley, D., Clarke, C. L. and Watson, B. (2005) 'Developing R&D capacity in a primary care trust: use of the R&D culture index.' Primary Health Care Research & Development, 6(01) pp. 17–23.

Whyatt, D., Scott, J. and Larson, A. (2006) 'The research capacity matrix.' Paper presented at the GP &PHC research conference abstracts 2006.' In.

Wilkes, L., Cummings, J. and McKay, N. (2013) 'Developing a Culture to Facilitate Research Capacity Building for Clinical Nurse Consultants in Generalist Paediatric Practice.' Nursing Research and Practice, 2013.

Wilkes, L. and Jackson, D. (2013) 'Enabling Research cultures in nursing: Insights from a multidisciplinary group of experienced researchers.' Nurse Researcher, 20(4) pp. 28–34.

Williams, C. M. and Lazzarini, P. (2015) 'The research capacity and culture of Australian podiatrists.' Journal of Foot and Ankle Research, 8(1).

Willis, Lord (2015) 'Raising the bar. Shape of caring: A review of the future education and training of registered nurses and care assistants.' London: HEE.

Willis, P. (2012) 'Quality with Compassion : Report of the Willis Commission.' Royal College of Nursing p. 55.

Winter, G. and Report, T. Q. (2000) 'A Comparative Discussion of the Notion of "Validity" in Qualitative and Quantitative Research.pdf.' The Qualitative Report, 4(3&4) pp. 1–12.

Woodward, V., Webb, C. and Prowse, M. (2007) 'The perceptions and experiences of nurses undertaking research in the clinical setting.' Journal of Research in Nursing, 12(3) pp. 227–244.

Wylie-Rosett, J., Wheeler, M., Krueger, K., Halford, B (1990). Opportunities for research-oriented dietitians. J Am Diet Assoc ; 90:1531–1534.