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Exploring Research Capacity Building and Culture within Nursing Educational Institutions in Saudi Arabia: A Multiple Case Study

BY

Abdulhamid G. Alrwili

Registration Number: 190299938

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List of Abbreviation

RCB- Research Capacity Building

MOH- Ministry of Health.

MOE- Ministry of Education.

SA- Saudi Arabia.

BSN- Bachelor of Science in Nursing.

MSN- Master of Science in Nursing.

CME- Continued Medical Education Department

SDL- Saudi Digital Library

EBP- Evidence Based Practices

Saudi NIH - Saudi National Institute of Health.

CS1- Case Study one

CS2 - Case Study 2

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Abstract

Background:

Unlike other academic disciplines, nursing is relatively new to the academic context. In many countries, particularly in countries where nurse training shifted to the university sector, the interest in building nursing research capacity increased to align with the new roles and expectations in academia and to facilitate the production of high-quality research to inform nursing practice (McCarthy & Fitzpatrick, 2008). Building on this shift toward academia, countries like the UK, USA, Australia, and Ireland have made considerable strides. Nursing leaders and educators in these countries have recognised the critical need to strengthen RCB while also acknowledging the barriers and facilitators that influence its development. Therefore, RCB has emerged as essential to advancing the nursing discipline within academic institutions (Chen, Sun, Tang, & Castro, 2019).

In Saudi Arabia (SA), the situation is similar to many other countries where nursing is new to academia and where nursing academic staff are rarely involved in conducting research (Darawad et al., 2018). While quantitative papers have been published on identifying the factors affecting research productivity among nursing academic staff, no studies are currently available that explore nursing research capacity building and culture in nursing educational settings.

AIM: To explore research capacity building (RCB) and the factors that facilitate and hinder RCB in nursing colleges in Saudi Arabia.

Design: Qualitative multiple case studies.

Methods: Data were collected between December 2021 and July 2022 from two nursing colleges in Saudi Arabia using documentary analysis, semi-structured interviews, and observational memos.

Sample: In In case study one, ten interviews were conducted, including: academic staff (n = 7), college leaders (n = 2), and internal stakeholders at higher leadership positions (n = 1). Twenty-seven documents were included, which were divided into five groups: organisational vision and mission (n = 3), minutes of committee (n = 5), policy documents (n = 5), annual report (n = 2), and publications in the university journal "Journal of the North for Basic and Applied Sciences" (n = 12). In case study two: Nine interviews were conducted, including: academic staff (n = 6), college leader (n = 2), and internal stakeholders (n = 1). Fifteen documents were included, which were divided into four groups: organisational vision and mission (n = 3), policy documents (n = 5), research activity guidelines (n = 5), and research centre documents at the college (n = 2).

Data Analysis: Thematic analysis was used to analyse data using a framework developed by (Braun & Clarke, 2006).

Ethical approval was obtained from the University of Sheffield and both case sites.

Findings:

- The results of the study indicate that the process of building research capacity occurs on multiple levels, and that these levels are not distinct but are interconnected to each other. Research capacity building was greatly impacted by institutional support and resourcing, collaboration and networking, and communication at multiple levels, including individual, college, organisation, and national.
- Absence of effective research leadership and infrastructure, time constraints, and an existing culture of competition and individualised work were all suggested as having a negative impact on building research capacity.
- The university's policy and regulations have shaped the current research culture in the colleges, particularly the policies and regulations relating to promotion and research funding.
- The current collaboration in nursing research tends to be informally established by individual efforts, and there is generally an absence of formal collaborations and partnerships between academia and practice, which contribute to a limited engagement of academic and clinical nurses in doing collaborative research.
- Lack of clear communication channels between higher education and health sectors contribute to the complexity of knowledge exchange and applying evidence-based practice (EBP), which is perceived by academic staff as a demotivator to publish high-quality research.
- Facilitators to RCB include the scholarship program, networking through social media, and specifying time for research, which was a useful strategy in managing time and providing space for research activities.

Recommendation: At the national level, the study recommends raising the nursing voice, empowering policymakers and leaders to translate evidence-based practice (EBP) into clinical settings. To incorporate nursing perspectives, the Saudi National Institute of Health should engage nursing policymakers, leaders, and expert researchers in related committees. At the organisational level, universities should revise policies, particularly the promotion policy and funding system, and develop policies and regulations to attract external funding. Universities should also include a nursing academic in existing research strategic plan committees. At the college level, research leadership should be embedded in Saudi nursing

colleges, with a focus on improving job recruitment criteria, targeting research experts, establishing mentorship scheme and developing sustainable research capacity building. Building research collaboration within and across disciplines is also crucial, with leaders from both institutions and organisations developing clear goals and shared visions. Lastly, individual academic staff should align their research interests with college and university objectives, enhance their research skills, and partner with experienced researchers or mentors for guidance and support.

Conclusion: This multiple case study explored a range of factors that affect research capacity in nursing colleges in Saudi Arabia and provides recommendations for developing a positive research culture in these settings.

Keywords: Nursing research, Capacity Building, Research Culture, Academic nurse, Case study, Documents Analysis, Thematic Analysis

1 Introduction Chapter

1.1 Introduction

The chapter has four main purposes. Firstly, it provides some background and context to the subject of Research Capacity Building (RCB) and its importance to the nursing profession within academic settings. The chapter then provides an overview of the context of the present study, the problem statement, and the significance of the study. The chapter helps in providing key definitions for the related terms used throughout the thesis. Finally, to aid navigation, the structure of the thesis is presented.

1.2 Background

In the last three decades, following the transition of nursing education from hospitals into universities, engagement in nursing research has taken on significant importance in academic settings (Gething & Leelarthaepin, 2000). The academic context brought new roles and expectations, emphasising the need for high-quality research to inform nursing practice (McCarthy & Fitzpatrick, 2008) and advance nursing discipline (Chen et al., 2019). As a result, the development of nursing research has become increasingly important (Segrott, McIvor, & Green, 2006) and spurred a heightened interest in research capacity building (RCB), particularly in countries where nurse training moved into the university sector. Building on this shift toward academia, countries like the UK, USA, Australia, and Ireland have made considerable strides. Numerous studies have explored the factors that influence RCB within nursing educational institutions. Nursing leaders and educators in these countries have recognised the critical need to strengthen RCB while also acknowledging the barriers and facilitators that influence its development. Therefore, RCB has emerged as essential to advancing the nursing discipline within academic institutions (Chen et al., 2019).

Despite these efforts, challenges remain—both for nursing institutions and academic nurses—stemming from external contextual factors and internal limitations factors (Tranmer et al., 2020). Indeed, more studies are needed to further refine interventions that support RCB development (Chen et al., 2019). The complexity of RCB becomes even more pronounced when considering geographical variations. The RCB process differs between local and international settings, with distinct factors influencing its development in each context (Segrott et al., 2006). Therefore, an exploration of RCB in specific geographical areas is essential to uncovering the unique issues and factors shaping RCB within a defined region.

1.3 Motivation for the Topic

During my undergraduate studies at a nursing college in Saudi Arabia, research always seemed like an afterthought, even though there were two research courses in the curriculum. After graduation, I took up a position as a teaching assistant at a different college for a few years. During my work, I observed that the same indifference toward research permeated this institution as well. Research was more of a formality than a focus. The great focus on teaching over research was obvious, although the university put research in one of the university's priorities.

This raised a whirlwind of questions for me: Why was there such a disconnect? Why was research, despite its acknowledged value, still has a lower priority than teaching? As I continued working, this question remained in my mind. I couldn't help but think about the missed opportunities—valuable knowledge that could have been generated and applied to advance nursing practice but wasn't.

Later, when I was doing my master's degree overseas, I observed a different research culture from what I had seen in Saudi Arabian nursing colleges. This inspired a greater curiosity in me. How can we change this dynamic in Saudi nursing colleges? What steps would be necessary for developing a vibrant research culture and enhancing research capacity in

nursing colleges across Saudi Arabia? As I am an academic nurse, I was motivated to run this study as its findings could contribute to developing and sustaining research capacity within academic nursing in the Saudi context. In addition, developing research capacity could also have a broader impact on healthcare systems and patient outcomes by producing evidence for practices.

1.4 Saudi Arabian Context

In Saudi Arabia, the history of nursing education began in 1948, when an American nurse working for the Arabian American Oil Company in Saudi Arabia initiated nursing classes with the company's endorsement. The classes were mainly focused on basic nursing skills, such as vital signs. The class started with only five students, and a year later, with the help of an Indian nurse, the number grew to nine. In 1950, the Saudi government and Arabian American Oil Company collaborated to establish the first nursing school (Aziz, 1956).

The establishment of the Ministry of Health (MOH) in 1951 and the subsequent introduction of the first one-year nursing programme 1958 represented further milestones. This programme was extended to two-years in 1961 and offered diploma certificates throughout health institutes. The number of such nursing programmes increased gradually to reach 15 by 1986. During the period between 1960 and 1986, over 1,600 nurses graduated with a diploma certificate from these Health Institutes (Phillips, 1989).

In addition to these health institutes, two universities established nursing departments in 1977 within their medical and applied medical science colleges. These nursing departments offered Bachelor Science in Nursing (BSN) certificate and provide four-years nursing programmes, followed by one-year internship (Phillips, 1989). The curriculum covered various modules but lacked a focus on research skills (Phillips, 1989).

Similar to many other countries, nursing in Saudi Arabia has recently integrated into the academic and university sector. In 2011, based on a royal decree, nursing programmes in Health Institutes and schools were transferred from the MOH to the Ministry of Education (MOE) (Aljohani, 2020). Consequently, these institutes/schools were amalgamated into 15 public universities as nursing colleges or departments. The MOE classifies these universities into two main categories: well-established (established in 2000 or before) and newly established universities (established in 2001 or later). This classification is based on the time of establishment. This integration aligned Saudi nursing education with global trends, allowing it to expand in both scope and scale.

1.4.1 Nursing Colleges in Saudi Arabia

The integration of nursing programmes into Saudi universities has led to rapid growth. The number of nursing colleges has increased dramatically from 10 in the year 2000 to 39 in 2019. Around 20 of these nursing colleges were established after 2006 (Saudi Commission for Health Specialist, 2018). Out of these 39 nursing colleges, 26 are located within public universities and 13 nursing colleges are located within the private sector, supervised by the MOE (Alluhidan, Herbst, et al., 2020).

Moreover, the diversity of the academic staff workforce influences the educational environment. Faculty members come from a variety of backgrounds, including Saudi and non-Saudi (expatriate) individuals, as well as Arabic and non-Arabic speakers. This variety gives distinct views to Saudi nursing colleges, which use English as the primary language in official meetings, classrooms, and examinations. The number of academic staff varies between nursing colleges depending on their size, reflecting the expanding nature of nursing education in the region.

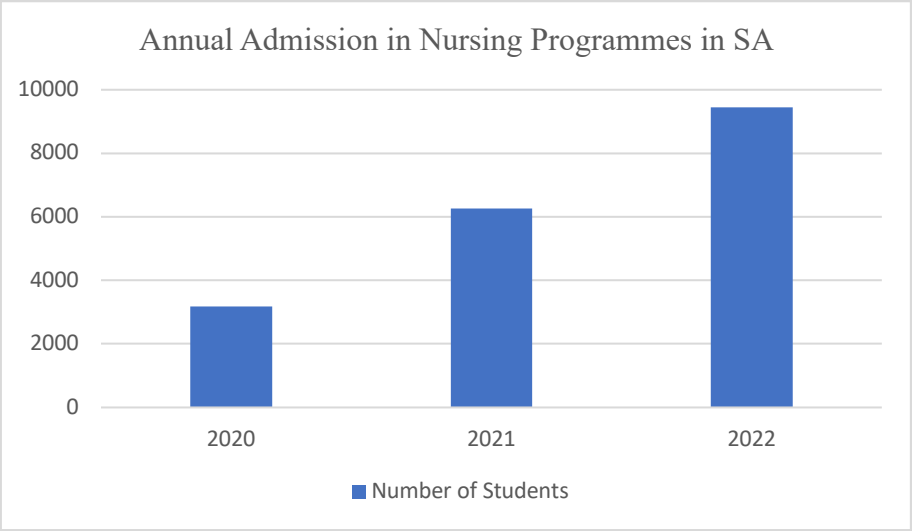
In line with this diversity, the classification of academic positions within Saudi universities—ranging from professor to teaching assistant (see Table 1.1) —provides a structured framework for faculty promotion. However, this classification also emphasises the need for more research-oriented roles, which are essential for supporting research capacity building (RCB) within these rapidly growing institutions.

Table 1. 1*: Categories of Academic staff in Saudi Universities*

Position	**Degree/ Qualification**
Teaching Assistant	Bachelor's degree
Lecturer	Master's degree
Assistant Professor	PhD Degree
Associate Professor	PhD Degree and at least 4 years' experience as Assistant Professor and attaining the minimum required scientific products.
Professor	PhD Degree and at least 4 years' experience as Associate Professor and attaining the minimum required scientific products.

Additionally, the growth in nursing education is evident in the increasing number of students. The number of new students enrolling onto nursing programmes has increased from 3170 in 2020 to 9449 in 2022 (Ministry of Education, 2022). In 2022, the total number of nursing students in nursing programs across the country was over 19,000. Figure 1.1 shows the significant increase of annual admissions in nursing colleges in SA.

Figure 1. 1: *Annual Admission of Students in Nursing Colleges in SA (2020-2022)*



This expansion in number of nursing programmes and students is a result of the country's response to an increasing demand for a nursing workforce, inspired by the national healthcare objectives for 2030.

1.4.2 Postgraduate Nursing Programmes

In 1988, the first postgraduate programme (Master of Science in Nursing) was developed at King Saud University (KSU). The Master's programme was offered in two tracks: primary care nursing and nursing service administration, and was exclusively provided for female students (Phillips, 1989). Since then, more than ten institutions around the country have established master's programs in a variety of nursing disciplines, considerably enriching the academic setting.

However, a PhD programme in nursing has only been established in 2020, also at King Saud University. This PhD programme is the only one of its kind across the country and is open to male and female nursing students (Aljohani, 2020). This is a significant step towards enhancing the research in Saudi nursing education; however, more work has to be done to mitigate the postgraduate programmes shortfall, notably for PhD programs in nursing.

Government-sponsored overseas scholarships serve as a critical supplement, helping to bridge the gap by enabling Saudi nurses to pursue advanced degrees abroad. (Aljohani, 2020).

1.4.3 Developing Nursing Research in SA

Nursing research in Saudi Arabia has grown gradually, yet there have been significant achievements. The first publication on Saudi nursing education appeared in 1988, and clinical nurses began publishing research-based publications in 1990 (Aboshaiqah et al., 2023). This marked the initial phase of a slow but consistent increase in nursing research production. Recent data indicates a significant increase in peer-reviewed publications between 2017 and 2021 (Aboshaiqah et al., 2023), indicating increased research participation in the Saudi nursing profession. However, to maintain this progress, continued initiatives to expand research capacity at both the undergraduate and postgraduate levels are critical.

Table 1.2: provides a summary of nursing research publication productivity in between 1985 and 2021. The data in the table was retrieved from the study of (Aboshaiqah et al., 2023).

Table 1. 2: *Nursing research publication in SA (1985-2021)*

Year	Number of publications
1985	1
1988	2
1990-2000	9
2001-2010	24
2011-2016	85
2017-2021	238

1.5 Problem Statement

Despite this recent upturn in research productivity, nursing research remains at the bottom of the league when compared to other related disciplines. A study was conducted to evaluate the published research in the health sciences in Saudi Arabia from 2008 to 2017 and shows that

nursing research outputs are significantly lower (1.6%) when compared to other health disciplines, such as medicine (54%), pharmacy (10%), and Dentistry (4.3%) (Ul Haq, Ur Rehman, Al-Kadri, & Farooq, 2020). This percentage includes nursing research in both clinical and academia and the study did not identify where most of the research came from i.e. if it originated from academia or clinical studies. Even assuming that the majority of nursing research comes from academia, it remains a fairly low proportion when compared to other health disciplines. This low percentage reflects a real need to investigate and explore the factors affected RCB within academia.

The focus of this PhD will be to explore why this remains to be the case and I will take this opportunity to begin to identify some of the early observations that I made when considering this topic. In Saudi Arabia, the situation is similar to many other countries where nursing is new to academia, and where faculty members are rarely involved in conducting research (Darawad et al., 2018). In a quantitative study conducted by Darawad et al. (2018) it is noted that nursing academic staff in Saudi Arabia showed a moderate level of negativity towards doing research, which is anticipated to have a negative effect on research productivity, affecting their willingness to participate in research activities.

There are few studies that have highlighted the barriers hindering individual academic staff from conducting and publishing research in Saudi Arabia. These findings sought to measure research productivity and were based mainly upon quantitative studies (Alghanim & Alhamali, 2011). A small number were centred on interviewing academic staff only (Alotaibi, 2023). However, a more rigorous exploration of RCB in nursing colleges in Saudi Arabia is not fully available and therefore its rich context is not understood. This is particularly apparent in the wider institutional context. Generally ,there is a dearth of literature on this topic in Saudi Arabia (Alghanim & Alhamali, 2011; Darawad et al., 2018). To date, there is no study in the Saudi literature that has explored RCB and understood the

barriers, facilitators, and strategies to RCB development in the wider institutional context. Therefore, future research is needed to fully understand the barriers to RCB within nursing educational institutions in the context of SA and to propose suitable strategies and recommendations that could help policymakers and nursing leaders in developing RCB and embed research culture.

1.6 Purpose of the Study

The purpose of this study is to explore research capacity building and culture within nursing educational institutions in Saudi Arabia. This exploration includes consideration of the barriers and facilitators that affect RCB in its context including considering these at different levels: individual, college, and university.

1.6.1 Research Question

The study will address the following research questions:

RQ1: what are the factors that affect Research Capacity Building in nursing colleges in Saudi Arabia?

RQ2: What are the barriers and challenges to Research Capacity Building in nursing colleges in Saudi Arabia?

RQ3: What are the strategies and recommendations for policymakers to help the development of Research Capacity Building in nursing colleges in Saudi Arabia?

1.7 Significance of the Study

The findings of this study are important in the context of building nursing research capacity within academic settings in SA. To the best of my knowledge, this study is the first qualitative study that has set out to explore RCB within nursing colleges in the Saudi Arabian context. Using an ecological model in this study has allowed me to investigate and explore RCB at multiple levels, including individual, college, organisational, and national. The

ecological model was adapted from (Andrews, Corbett, Dail, & Pinto, 2019) which focused on a multilevel approach targeting the individual, college, and university levels. By considering these different levels, the ecological model in this study helped the researcher understand how various factors at different levels interact to influence RCB, enabling a more comprehensive understanding of the phenomena being investigated. The use of such a model highlights the interconnectedness of the individual with the national, via college and organisational level factors. To the best of my knowledge, this has not been accomplished before in nursing settings in SA.

Furthermore, to the best of my knowledge, a case study methodology has not been used in a research study of Saudi Arabian nursing academics. The multiple-case study approach, which includes three different data sources, has provided rich data to gain insight into the issue in order to explore RCB in its broader context. Using the ecological model and a case study approach has provided a distinct perspective on the issue of RCB in SA and highlighted individual experiences within the institutional context. The inclusion of non-nurses in such a study is also novel.

The study has highlighted a range of factors that inhibit and facilitate RCB in nursing colleges in SA. It provides an opportunity to explore these issues through the implementation of an ecological model.

1.8 Contribution to the Knowledge

The findings of the study have the potential to contribute to knowledge by providing a better understanding of the current barriers, facilitators, and strategies for developing RCB within nursing colleges in Saudi Arabia. The findings of the study may directly help individual academic staff, college leaders, and policymakers to develop nursing research capacity building in higher education. The study may also provide strategies and practical recommendations to build research capacity at multiple levels: individual, college,

organisational, and national. These recommendations could be useful for developing strong research capacity and embedding research culture in nursing educational institutions in Saudi Arabia.

1.9 Definitions of Terms

1.9.1 Research capacity Building (RCB)

Many authors have defined research capacity building. RCB has been defined as, "*a general term for a process of individual and institutional development which leads to higher skills and greater ability to perform useful research"* (Trostle, 1992) p.1321. Similarly, the Department for International Development (DFID, 2010) defines research capacity building as, *"...enhancing the abilities of individuals, organisations and systems to undertake and disseminate high quality research efficiently and effectively* (P. 3). Furthermore, Chen et al. (2019) undertook a concept analysis within a nursing context, where the authors defined RCB as, *"the ability to conduct nursing research activities in a sustainable manner, in a specific context, normally at the non-individual level* (p. 6).

1.9.2 Research culture

Research culture refer to '*the shared values, assumptions, beliefs, rituals and other forms of behaviour geared towards the acknowledgement of the value and significance of research practice and its outputs as valued, worthwhile and pre-eminent activity'* (Evans, 2007)

1.9.3 Academic Staff

Academic staff are defined as a faculty member who occupies a permanent academic position at the college of nursing, such as a Professor, an Associate Professor, an Assistant Professor, a Lecturer, a Research Assistant, and a Teaching Assistant.

1.9.4 Nursing College Leaders/Academic leaders

Such leaders are defined as faculty members who hold a leadership position at the college level such as, Dean, Vice Dean, Head of department, or Head of committee.

1.9.5 Stakeholders

In this context, stakeholders include leaders at the university's highest level such as, Scientific Research Deanship.

1.10 Structure of the Thesis and Overview of the Content

In total, this thesis comprises nine chapters as the following:

Chapter 1: Introduction: the chapter provides background to the topic and issue being investigated. It also provides an overview of the context of the present study.

Chapter 2: Literature Review, 'Scoping Review': the chapter provides a fundamental knowledge of RCB in nursing educational institutions, enabling the identification of the main barriers, facilitators, and approaches for developing RCB. These scoping review findings also helped in designing the present study.

Chapter 3: Methodology and Method: this chapter provides a detailed description of the methodology and method used to achieve the aim of the study and to answer the research questions.

Chapter 4: Overview of Case Study 1: the chapter presents a broad overview of Case Study One. Including general information about the university, nursing programme, demographic data about staff and students, and details the research activity in the college.

Chapter 5: Main Findings of Case Study 1: the chapter presents the finding from analysis of the data collected in case study one.

Chapter 6: Overview of Case Study 2: the chapter presents a broad overview of Case Study two. Including general information about the university, nursing programme, demographic data about staff and students, and details the research activity in the college.

Chapter 7: Main Findings of Case Study 2: the chapter presents the finding from analysis of the data collected in case study two.

Chapter 8: Cross-Case Findings: this chapter presents the findings from cross-case analysis of

data from the two case studies

Chapter 9: Discussion, Study strengths and limitations, and Recommendation: the chapter presents the overall findings of the study and discusses these findings with reference to the body of literature that exists in the area. The chapter then concludes with a discussion of the study's limitations, implications, and recommendations.

1.11 Summary

This chapter provided a background about the research capacity building in nursing academic settings. It also provided an overview about the context of the study, including the history of nursing programme and how was developed in academia. The chapter further describe the significance of the study and outlined a structure of the thesis. The next chapter, ‘literature review’, provided a fundamental knowledge of RCB in nursing educational institutions, enabling the identification of the main barriers, facilitators, and approaches for developing RCB.

2 Chapter Two: Literature Review

2.1 Introduction

The chapter provided fundamental knowledge of RCB in nursing education institutions. The chapter includes a scoping review of RCB in nursing educational institutions, with the purpose of identifying the main barriers, facilitators, and approaches for developing RCB. The chapter began with a background about the RCB in nursing, the problem statement, and the aim and objectives of the scoping review. The chapter then details the review methodology and presents the findings, limitations, and conclusion.

2.2 Background

Unlike other academic disciplines, nursing is relatively new to academia (Jootun & McGhee, 2003; Segrott et al., 2006). Nursing also differs in that it is a practice-based profession with clinical skills requirements that sit alongside and complement those activities aimed at research and developing an evidence base. Advancing the nursing discipline requires a body of knowledge based on high quality research (Chen et al., 2019).

In academia, career progression is often linked to research activity as advances in knowledge are a key purpose of universities. Excellence in research, teaching and engagement are the three mean areas of academic staff promotion and career progression within the sector (Cleary, Sayers, & Watson, 2016). Consequently, engagement in nursing research has become significant in the nursing academic field (Gething & Leelarthaepin, 2000). There is an expectation that research activities and productivity in the academic context helps in advancing the nursing discipline and the growth of evidence-based practices. As such, understanding how to develop research capacity building (RCB) becomes important within nursing academic departments and university institutions (Chen et al., 2019).

In many countries, particularly in countries where nurse training has transitioned to the university sector, the interest in building nursing research capacity has increased to align with

the new roles and expectations in academia in order to facilitate the production of high-quality research to inform and shape nursing practice (McCarthy & Fitzpatrick, 2008).

2.3 Problem Statement

Research Capacity Building (RCB) remains a challenge for both nursing educational institutions and academic nurses (Tranmer et al., 2020). Enhancing research capacity is a major issue facing nursing education (Green, Segrott, & Hewitt, 2006). The challenges in RCB are said to be due to external contextual factors and internal factors (Tranmer et al., 2020). Chen et al. (2019) state that more studies are needed to develop and redefine interventions for improving RCB. Thus, understanding and exploring the barriers and facilitators can be seen as an essential step in RCB.

2.4 Aim of the Scoping Review

The aim of this scoping review is to explore those barriers and facilitators that might affect the RCB within nursing educational institutions.

2.4.1 Objectives:

1. To identify individual and organisational barriers that might compromise RCB within nursing educational institutions.
2. To identify individual and organisational facilitators that might enhance RCB within nursing educational institutions.
3. To identify approaches that have been used to develop RCB within nursing educational institutions.

2.5 Scoping Review

To address these aims and objectives comprehensively, a scoping review was selected as these are widely used in answering exploratory questions and mapping broad topics (Pham et al., 2014). A scoping review is therefore an appropriate approach for this study because it systematically maps key concepts and types of evidence related to a broad topic (Arksey &

O'malley, 2005). Also, scoping reviews help identify evidence and research gaps (Arksey & O'malley, 2005; Tricco et al., 2016).

2.6 Methodology

This scoping review followed the Arksey and O'Malley framework (2005). According to this framework, there are five stages: (1) identifying the research question (2) identifying relevant studies (3) selecting studies (4) charting the data (5) collating, summarising and reporting the results.

2.6.1 Identifying the Research Question

Aligning with the aim of review, which is to explore barriers and facilitators that might affect research capacity building in nursing educational institutions, the main research question was identified as: What barriers and facilitators have been experienced in building research capacity within nursing educational institutions?

Sub-questions include:

a. What are individual and organisational barriers that might compromise RCB within Nursing educational institution?
b. What are individual and organisational facilitators and strategies have been used to overcome the RCB challenges within Nursing educational institution?
c. What are approaches have been used to develop RCB within Nursing educational institution?

2.6.2 Identifying Relevant Studies

2.6.2.1 Eligibility Criteria.

The concept. The review focuses on studying barriers and facilitators to RCB. Thus, relevant studies were included if they described the following concepts: barriers and/or facilitators, research capacity building, and nursing educational institutions.

The context. The review included any higher educational institution where nurse education occurs. Nursing educational settings include nursing academic settings, universities, higher education colleges, and schools of nursing.

Location. All geographical settings were included to help examine the process of measuring and evaluating RCB and how it might differ between geographical settings.

Source of evidence. Most types of publications, including a range of study designs, were included. This helped to ensure the review covers the most relevant studies in the field. The study designs in the review, included qualitative, quantitative, and mixed-method designs. Review articles were included: literature reviews, scoping reviews, systematic reviews, narrative reviews, critical reviews, evidence maps, rapid reviews, evidence syntheses, and reviews of review. Opinion articles were also included. An opinion article can provide special perspective on a current issue, which is usually derived from authors who have extensive knowledge. It can also provide future directions on a specific problem (Berterö, 2016).

Language. Studies were included if they were written in English or Arabic. Arabic is the Author's native language, and the proposed location of the subsequent research proposal. The Arabic language will be used to identify relevant articles that have been published in Arab regions, such as the UAE, Jordan, and Saudi Arabia.

Date. The databases were searched from January 1995 until October 2020. This date was selected because, since 1995, there has been a greater focus on RCB in nursing academia. This focus on RCB occurred, in part, because of the transfer of nurse training from the health sector to higher education institutions (HEIs) in the period between 1990 to 1995 in countries such as the UK (Gething & Leelarthaepin, 2000), the Republic of Ireland (Begley, McCarron, Huntley-Moore, Condell, & Higgins, 2014), and Australia (Lee &

Metcalf, 2009). I chose October 2020 because it was the time I conducted the scoping review prior to submitting the confirmation review report of my PhD study.

Although the initial search focused on articles from 1995 to October 2020, efforts were made to keep up with any relevant publications that appeared after October 2020. To accomplish this, an automated weekly update from the databases was configured to bring the most relevant findings straight to the researcher's mailbox. These updates were particular to the specific search terms and predefined criteria. Receiving these weekly emails allowed the researcher to keep up with the latest related publications. Throughout my PhD study, any additional publications that satisfied the inclusion criteria and were relevant to the study's aims were considered, particularly in the discussion and introduction chapters of this thesis.

2.6.2.2 Exclusion Criteria

Studies were excluded if they describe the barriers and facilitators to RCB exclusively within healthcare settings (i.e., not in the nurse training context). The review aims to map barriers and facilitators to RCB within nursing educational settings rather than within the wider health care system. Conference abstracts were also excluded because the review is focusing only on fully completed empirical work and seeking research evidence of barriers and facilitators and considering approaches to how RCB is evaluated and measured.

2.6.3 Study Selection

Given the time constraints of a PhD study, the researcher prioritised databases that are most likely to produce the most relevant results, taking into account the topic and scope of the review. Databases that were directly relevant to nursing and healthcare were included. The search strategy was undertaken through the following databases: PubMed, Medline, CINAHL, Scopus, and Web of Science.

Conversely, databases that are not primarily focused on nursing or healthcare were excluded. For instance, the ERIC database, which centres on general educational literature, was

excluded because it focused on general educational literature. Additionally, the decision to exclude certain databases, such as Google Scholar, was made to balance thoroughness with feasibility. Unlike specialised databases like PubMed or Scopus, Google Scholar lacks advanced search options, which is essential for conducting rigorous and systematic searches (Masic, 2019).

The full electronic search strategies are described in Appendix A. The dates were searched from 1995 until October 2020. The reference lists of identified studies were also searched to find any additional relevant studies. Study selection is reported using the PRISMA guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009). PRISMA flowchart is available in Appendix B.

2.6.4 Charting the Data

A charting data sheet (Appendix C) was developed to record all the characteristics of included studies and the evidence/data relevant to the review questions. The extracted information included the following: author(s), year of publication, origin/country of origin, aims/purpose, methodology/methods, key findings that include barriers, facilitators and measurement of RCB, and future research/limitations.

2.6.4.1 Critical Appraisal

Although scoping reviews primarily aim to map the evidence and identify gaps rather than evaluate the quality of individual studies, it is still useful to perform a quality appraisal to ascertain the strength of the evidence under review.

In this scoping review, whilst charting the data, a critical appraisal of individual sources of evidence was conducted using the JBI (Joanna Briggs Institute) checklists (Joanna Briggs Institute, 2017). The purpose of this evaluation is to assess the methodological quality of a study and to ascertain the extent to which the study has considered the possibility of bias in its design, conduct, and analysis.

Generally, the methodological quality of the included studies varied. Typically, the strengths were a suitable study design and appropriate data analysis methods. Most of the studies

presented provide adequate justification for their selected approaches and sufficiently detailed data collection techniques (e.g., document analysis, focus groups, and interviews.). However, some studies have limitations in terms of sample size, triangulation, reflexivity, or insufficient analytic data.

2.6.5 Collating, Summarising and Reporting the Findings.

The findings will present the literature search, a description of study characteristics, and then the integration of findings is presented at four different levels. Each of these levels is presented in two parts to best answer the review questions. First, barriers to RCB are discussed, and then facilitators and strategies for RCB are discussed.

2.6.6 Literature Search

A total of 559 articles were identified in all databases. After removing duplicated articles, 300 articles were eligible for title and abstract screening. After screening, 64 articles remained for full-text review. The full-text analysis resulted in 21 articles that met the inclusion criteria and were included in the review. Papers were rejected at the full-text stage for the following reasons: not reporting barriers or facilitators (n=13), not published in English or Arabic (4), not related to academia (n=19), and focusing only on clinical setting (n=7). PRISMA flowchart is available in Appendix B.

A total of 21 studies met the inclusion criteria and were included in the scoping review. The studies (n = 21) included 12 qualitative studies, one quantitative study, three reviews, three evaluative studies, and two opinion articles.

The studies included in the review were located in different countries, including the UK (n = 7), Republic of Ireland (n = 2), USA (n = 3), Canada (n = 1), Australia (n = 4), Philippines (n = 1), Middle East (n = 2), and South Africa (n = 1). While the majority of the studies focused on nursing in academia (n = 17), some studies combined both the clinical and academic settings (n = 3), and one study did not specify the setting.

The participants in the included studies were drawn from a variety of backgrounds. For example, some studies involved nurse academics, while others involved senior managers as well as nursing academics. Clinical nurses were also involved in those studies conducted in both clinical and academic settings.

Analysis of the studies highlighted a wide range of barriers, facilitators, and strategies for RCB at different levels, including individual, team, network/relationship, organisational, or national. A. Cooke and Green (2000) states that research capacity development should take place at different levels. J. Cooke (2005) developed a framework to evaluate RCB, which entails four different levels: individual, team, organisational, and the network or supra-organisational support level. In integrating the papers, "Cooke's framework" was adopted to highlight the barriers, facilitators, and/or strategies based on the above levels.

The integration of findings is therefore presented at four different levels. To best answer the review questions, each of these levels is presented in two parts, first, barriers to RCB are discussed, and then facilitators and strategies for RCB are discussed. A summary of barriers and facilitators is found in Appendix D and E.

2.6.7 First level: Individual level

2.6.7.1 Barriers to RCB

Worrall-Carter and Snell (2003) used a grounded theory approach to explore the experiences and perceptions of nurse academics in relation to research and scholarship and they identified various challenges experienced by nurse academics. Lack of relevant knowledge about the research process and writing was a major issue for nurse academics, particularly those transitioning from clinical practice to academia. Based on nurse academics' experiences, Worrall-Carter and Snell (2003) found that nurse faculty members were concerned by the constant pressure requiring them to attain advanced degrees, carry out additional research,

and publish findings. The enormous pressure to do this resulted in increased anxiety and stress, as well as related problems such as an inability to write grant applications and a lack of adequate time to conduct research or to complete higher degrees (Worrall-Carter & Snell, 2003).

Lack of adequate time for research is commonly reported as a barrier affecting RCB at the individual level. Lack of time was often linked to an excessive workload (Andrews et al., 2019). Although the barriers are experienced at an individual level, they link to a wider social, cultural, and economic set of conditions impacting these individual decisions regarding their research involvement. An exemplar study, conducted in Ireland by (Begley et al., 2014), reported that midwifery and nurse tutors experienced the challenge of increased workload, typified by a teaching focus alongside an increased research-intensive work life. Unlike in their previous posts (in the 4-year BSc in Nursing programmes), where the role of nursing and midwifery tutors was predominantly teaching. Begley et al. (2014) showed that RCB among nurses and midwives in the academic setting is characterised by the requirement to undertake research while simultaneously teaching large-size classes/groups and carrying out complex administration roles for which they were less experienced.

Andrews et al. (2019) further revealed that the challenge of excessive workload is made worse by inadequate research funding and difficulty in successfully acquiring grants. Alongside this, a lack of mentorship, training, and support for junior faculty staff was also cited, resulting in a reduced motivation to conduct research (Andrews et al., 2019). Segrott et al. (2006) identified other barriers to RCB among nurses, for example, the lack of the necessary research infrastructure, such as a research unit or research director, and the lack of direct support needed to ensure nursing and midwifery academics are research active.

2.6.7.2 Facilitators/strategies to RCB

Begley et al. (2014) tested strategies such as academic leave, research maintenance funding, reduced teaching load, student stipends, and visiting professors to help build research capacity. Findings from Begley et al's study showed that implementing these strategies led to a significant improvement in the proportion of staff holding and/or undertaking PhDs, the level of funded research, and the number of presentations, conferences, and peer-reviewed publications completed. Another study involved implementing strategies that enabled nurses in three institutions to effectively use their time, such as organising workloads, making time, and redefining role responsibilities (Worrall-Carter & Snell, 2003). These strategies allowed them to save time for research activities.

Andrews et al. (2019) tested strategies such as ensuring qualified and well-trained faculty staff when hiring new academic staff, enhancing individuals' commitment, and engagement with external networks of research. All of these strategies were reported to promote the development of a positive culture and climate (Andrews et al., 2019). The outcomes of these strategies, demonstrating a significant improvement in almost all areas of the mission, including research, teaching, service, and practice, confirmed the efficacy of these strategies (Andrews et al., 2019). The proportion of full-time faculty staff with a doctorate increased from 67% in 2012 to 92% in the fall of 2018. Additionally, between 2012 and 2018, tenure track faculty staff increased twofold, from 11 in 2012 to 22 in 2018, whereas the ratio of tenure track faculty staff to clinical track faculty staff rose from 33%:67% in 2012 to 40%:60 in 2018 (Andrews et al., 2019).

A summary of the barriers and facilitators at the individual level can be found in Table 2.1

Table 2. 1: *A summary the barriers and facilitators at the individual level.*

Barriers	Facilitators/strategies
• Lack of relevant knowledge about research. • Lack of adequate time for research. • Lack of motivation	• Organising workload and making time for research • Redefine roles and responsibilities • Engagement with external network of research

2.6.8 Second: Departmental Level (Team level)

2.6.8.1 Barriers to RCB

A case study conducted by Green et al. (2006) identified barriers to nursing and midwifery RCB at the departmental level that included a lack of confidence and motivation, especially among neophyte researchers. A lack of adequate time for research as a result of excessive teaching loads, and difficulties managing the complex interface between teaching and the requirement to conduct research were also noted (Green et al., 2006). These barriers to research capacity are reiterated in a further study conducted by(B. Green et al., 2007), which identified the key barriers to research in nursing to be a lack of adequate time for conducting research and excessive teaching workload, driven by departmental need.

A qualitative study involving students from various institutions in South Africa found that barriers to RCB among nurses included a lack of a departmental research culture and a lack of knowledge and support (Roets & Lubbe, 2014). These results are consistent with those of a case study focusing on a nursing school in the Republic of Ireland conducted by (McCarthy & Fitzpatrick, 2008). Their study emphasised the importance of addressing problems relating

to the departmental development of research expertise, limited leadership, and restricted research capacity among nursing academics (McCarthy & Fitzpatrick, 2008).

Despite intensive measures implemented at nursing schools to encourage individuals to participate in research endeavours, Jootun and McGhee (2003) also identified cultural barriers/factors that hindered the development of excellent research. These included nursing being a relatively new academic discipline (and new to academic settings) and nursing being a more applied, practice-based profession.

Furthermore, the absence of academic leadership and research leaders tends to inhibit the continued development of research capacity at departmental level (A. Cooke & Green, 2000; B. Green et al., 2007; McCreaddie et al., 2018). Some institutions are not very clear about highlighting research in their strategic plans or institutional vision (Segrott et al., 2006). This is often linked to the lack of strong academic leadership in the institution.

2.6.8.2 Facilitators/strategies to RCB- departmental level

Segrott et al. (2006) emphasised a balance between institutional and individual needs, and thus suggested that research capacity strategies ought to be developed through focused strategies and objectives that are flexible enough to facilitate the creation of individual faculties. Segrott et al. (2006) further asserted that such efforts to develop RCB need to be sustainable.

Strategies have been implemented by using various approaches such as ‘holistic’ or ‘egalitarian’ approaches, ‘natural talents’ or ‘elitist’ approaches, ‘top-down’ approaches, bottom-up’ approaches, and whole system approaches (Segrott et al., 2006). All of these have been reported to have both strengths and weaknesses. The whole system approach combines three approaches, including bottom-up projects, coalitions, and top-down projects, to tap each approach’s benefits (Segrott et al., 2006). While these approaches have inherent drawbacks, an overall strategic approach has been prescribed as consisting of well-defined strategies,

well-articulated objectives, and effective leadership to constitute a common agreement around RCB (Segrott et al., 2006).

One study proposed the elitist or natural talent approach for developing lecturers, researchers, or nurse tutors (Traynor & Rafferty, 1999). The elitist approach was described as a strategy whereby resources and support for research are channelled to particular individuals who exhibit a given talent or interest, or to those individuals who appear suitable for development after reviewing their curriculum vitae (Traynor & Rafferty, 1999).

One study, that relied on a case study methodology, involved implementing an "inclusive approach" to ensure all staff members advance their research capability. Specific strategies included in-house graduate programmes, workshops and seminars, research focus and interest groups, and mentorship. The effectiveness of these strategies rests on their ability to offer a supportive research infrastructure and opportunities for neophytes to be involved in research projects (Green et al., 2006; Schwind et al., 2014). However, the inclusive approach was not effective for all nursing staff, especially neophyte researchers, who often lack the confidence needed to conduct research. This approach also had the effect of reducing the output of research publications by experienced nursing academics (Green et al., 2006).

McCarthy and Fitzpatrick (2008) used an inclusive approach to developing research capacity building in a case study that focused on specific attributes. McCarthy and Fitzpatrick described the main elements in the process of building research capacity as the following: changing the internal culture, providing appropriate research training for the staff, mentoring of juniors, consulting role, financial support for PhD progression, institutional support, and research teams with particular interests/themes.

2.6.8.2.1 Changing the internal culture

Developing RCB requires clear strategies and objectives that impact the institution's culture and that are well known by all staff in the institution. Changing or establishing a research

culture in the institution can be done by identifying and involving research priorities in the strategic plan. The strategic plan should include research strategies that clearly indicate the aims and actions required to achieve specific goals. All staff should be aware of and agree on these strategies.

2.6.8.2.2 Providing appropriate research training for the staff

Encouraging and supporting staff to pursue a higher degree can facilitate the growth of well-educated staff who can conduct and encourage research.

2.6.8.2.3 Mentoring of juniors

Classes and workshops were developed to help junior researchers improve their skills in statistics and research methodology. Staff confirmed that there is a benefit from these classes and workshops, in addition to the support offered when applying for grants.

2.6.8.2.4 Consulting Role

Recruiting an external consultant and scholar was listed as an additional strategy. They play an important role in teaching research courses, guiding the research activities, and providing assistance in writing for publication. The academic staff stated that the consultant role was beneficial.

2.6.8.2.5 Financial support for PhD progression.

Financial support was offered for staff to facilitate their participation and attendance at conferences. Also, rewards based on a competitive process were offered for those who showed interest in research. Financial support for PhD programmes demonstrated some success as these increased from four in 2005 to 11 in 2007.

2.6.8.2.6 Institutional support.

Redefining the job description to include research activities as part of the staff workload. This allows staff to balance research activities with other assigned work, such as teaching and

administrative tasks. Another intervention included sabbatical leave and ensuring a decreasing workload for those who enrolled in the PhD programme.

2.6.8.2.7 Research teams and themes.

Research themes and groups were established based on the interests of the current senior staff. Junior staff were asked to align their interests with these established themes.

Nevertheless, B. Green et al. (2007) documented contrasting findings in a comparative study that sought to compare two nursing schools based in the United Kingdom (UK). The research capacity-building approach for one school in Wales was predominantly 'inclusive'; the other school in England had an approach defined as ‘exclusive’. Although similar strategies were implemented in both schools, the Welsh-based school had a significant improvement in research funding, research publication output, and the Research Assessment Exercise (RAE) compared to the England-based school (B. Green et al., 2007). This could be linked to the nursing school in Wales being part of a wider interdisciplinary network. More about the role of interdisciplinary networks in nursing research will be noted later in the strategies and facilitators at the supra-organisational support level section.

Jootun and McGhee (2003) stress the importance of effective management and leadership as a critical success factor in the development of a culture that provides sufficient support and guidance for nursing academics undertaking research. In the same vein, the study by Segrott et al. (2006) emphasised the significance of having an overall clear strategic approach that is well communicated and backed up by an effective leadership strategy as constituting a common point of agreement. Authors concluded that turning support into action comprises three key strategies: building infrastructure, providing training and facilitating collaboration, and creating a research culture and climate.

The first strategy, building infrastructure, requires establishing a research manager, and a research office that can support staff in writing for publication and grant capture. Offering mentoring by experienced researchers plays an important role in creating a good research infrastructure. Furthermore, internal funds can facilitate research involvement by staff.

The second strategy, providing training, helps to improve the shortage of research skills among individual staff. Providing research training programmes can help in developing research skills and confidence.

The third strategy, creating a research culture and climate, suggests that any strategies or interventions would not be fully effective if there was no obvious supportive research culture in the departmental context.

A summary the barriers and facilitators at the department/college level can be found in Table 2.2

Table 2. 2: *A summary the barriers and facilitators at the College level.*

Barriers	Facilitators
• Lack of motivation	• Effective leadership
• Limited Leadership	• Changing internal culture: prioritising research in strategic plan
• Excessive Teaching load	• Well-defined strategies
• Lack of institutional support	• Appropriate research training, Workshop, seminar, mentorship
• Lack of research culture	• Supportive research infrastructure, research team/centre, Consulting Role, Financial support

2.6.9 Third: Organisational Level

2.6.9.1 Barriers to RCB

The most critical barriers at the organisational level are lack of research funding (A. Cooke & Green, 2000; Segrott et al., 2006; Torres et al., 2017) and an absence of research-related infrastructure (McCarthy & Fitzpatrick, 2008; McCreaddie et al., 2018; Segrott et al., 2006).

In some academic organisations, the reward system was reported as demotivating. There are few financial rewards for research, and some universities do not cover travel costs for conference attendance. In some institutions, the extra time for research activity is not usually rewarded unless research is being published, while taking extra hours for teaching is often immediately rewarded (Al-Nawafleh, Zeilani, & Evans, 2013). This acts to demotivate individuals and dampen the spirit of research, affecting the existing research culture in the organisation. This lack of reward can drain confidence and stifle a research culture (McCreaddie et al., 2018).

There are also barriers in relation to the nonexistence of, or limited access to, intra- and inter-disciplinary collaborations within the university (Worrall-Carter & Snell, 2003). This collaboration is also limited between different universities within the same or different geographical locations (Priest, Segrott, Green, & Rout, 2007). Priest et al. (2007) demonstrated that being a party in a multidisciplinary research team, where members come from different institutions geographically situated far from each other, presents logistical challenges. These challenges include communication, coordination, meeting arrangements, and setting improbable objectives, all of which hinder the successful development of research capabilities. Further, managing ownership in collaborative research is also a problem (Priest et al., 2007).

2.6.9.2 Facilitators/strategies to RCB

A few studies focused on research capacity strategies at the university level (Andrews et al., 2019; Torres et al., 2017). These include strategies such as multi-brokered opportunities and partnerships, faculty development and networking forums, and harnessing available resources. A descriptive study targeting a clinical intensive university in the Philippines reported that faculty members regarded themselves as highly knowledgeable and skilled in the realms of research (Torres et al., 2017). The authors identified the motivating factors at the organisational level, which include available research grants and funding, an improved research track record, awards and recognition, and tenure and promotion.

A summary of the barriers and facilitators at the organisational level can be found in Table 2.3

Table 2. 3: *A summary the barriers and facilitators at the organisational level.*

Barriers	Facilitators/strategies
• Lack of Fund	• Partnership
• Lack of Research infrastructure	• Availability of Research grant
• Rewarding system for research	• Research track record
• Lack of collaboration within/inter organisation/s.	• Award and recognition, Promotion

2.6.10 Fourth: The network or supra-organisational level

2.6.10.1 Barriers to RCB

Collaboration and relationships between hospital facilities and universities have been reported to be an effective RCB approach that could result in mutual benefits for the partnering organisations (Gursoy, 2020). Despite the benefits, Gursoy (2020) identified ‘roadblocks to sustaining collaboration’ between academic and clinical settings that have an

impact on RCB in both settings. From this theme of ‘roadblocks to sustaining collaboration’, the authors identified four subthemes demonstrating how inter-organisational collaboration hinders research capacity. These subthemes include cultural differences between academic and clinical settings, the excessive workload for managers who have dual roles in both settings, discontinuity between demands, and being accountable to manage in both an academic and clinical setting (Gursoy, 2020). In the same vein, Davis, Harris, and Boland (2019) indicated that problems associated with affiliating organisations are manifested through incongruence in practice and academic culture and policies, competition on available time and funds for carrying out research, and the responsibilities of every researcher and the entire faculty.

Moreover, Lee and Metcalf (2009) identified clinical issues that ensued from the collaboration between clinical nursing staff and university academics. The study findings here generally showed collaboration was more likely to result in mutual benefits for the collaborating organisation. Their study further highlights that university and hospital collaboration has been implicated in a lack of research capacity strategies and differing key performance indicators, both of which hinder the development of research capabilities.

2.6.10.2 Facilitators/strategies to RCB

As a relatively new university discipline, the development of nursing research suffers from a lack of interdisciplinary support from other related disciplines. From an ecological perspective, three studies focused on partnerships between nursing schools and health care settings and/or nursing schools and other academic disciplines, as an essential approach to the promotion of research capacity among nursing researchers. One of these involved a qualitative study conducted in a nursing school and a healthcare facility in Philadelphia State (Gursoy, 2020), and another in Hawaii (Davis et al., 2019). Gursoy (2020) focused on the

partnership between the clinical setting and academia, demonstrating mutual gain and benefits. The benefits included three sub-themes: increased quality of education; shared opportunities, resources, and expertise; and contribution to overall institutional reputation. Clinical leaders were identified as the cornerstones of clinical school-academia partnerships through their dual roles as clinical educators in the hospital and as faculty members in the school of nursing (Gursoy, 2020).

Similarly, Davis et al. (2019) reported an academic-practice partnership between the Queen's Health System (QHS) and the University of Hawaii at Mānoa School of Nursing & Dental Hygiene (UHM SONDH). Their model began with a partnership between SONDH faculty members and staff nurses with the aim of promoting mutual research or evidence-based practice (Davis et al., 2019). The study findings indicate that the partnership resulted in significant benefits for each organisation, including the development of nursing research capacity. Through this collaboration, SONDH faculty members had the chance to create and carry out clinical research, strengthen academic-practice relationships, and offer expert clinicians the support they required to improve their practices. Other benefits from the academic-nursing partnership included opportunities to learn new research design and methods, stay abreast of clinical issues, learn about new clinical areas, access intramural funding to support research, and publish and disseminate research findings (Davis et al., 2019). The authors identified various products that ensued from this partnership, such as podium presentations, three publications, and eight poster presentations delivered at national, local, and international conferences (Davis et al., 2019).

Unlike these two studies, which were conducted in the US context, one study was conducted in Australia by Lee and Metcalf (2009) and focused on a partnership between La Trobe University and an acute care hospital in Melbourne. In contrast to Gursoy (2020) and Davis et al. (2019), whose findings show that partnerships were beneficial to both organisations, Lee

and Metcalf (2009) reported that the academic-hospital setting partnership led to increased research papers authored primarily by clinicians (rather than university staff). The partnership was also reported to result in increased dissemination of research findings by clinical staff through oral and poster presentations during the hospital research week and at national and international conferences (Lee & Metcalf, 2009). In addition, the number of clinical staff enrolled in master and doctoral programmes has increased significantly, partly due to availability and an increase in external funding. The authors also reported increased availability of adequate time for clinical staff to dedicate to research, although prioritisation of time allocation was warranted to reap maximum benefits.

Overall, partnerships between academia and clinical have been shown to be effective in enhancing research capacity among clinical students and staff members through leadership and external funding (Davis et al., 2019; Gursoy, 2020; Lee & Metcalf, 2009).

A summary of the barriers and facilitators at the supra-organisational level can be found in the table 2.4.

Table 2. 4: *A summary the barriers and facilitators at the supra-organisational level.*

Barriers	**Facilitators/strategies**
• Lack of interdisciplinary support. • Lack of collaboration with clinical setting. • Competition in available fund and time	• Partnership with clinical setting • Clinical Leadership is cornerstone of partnership between (academia and clinical)

The identified barriers and facilitators in this scoping review are highlighted in Table 2.5 and Table 2.6.

Table 2. 5: *Identified Barriers to RCB at different levels*

Individual level.	College level	Organisational level	Supra- organisational level
• **lack of relevant knowledge.** • *Lead to pressure and anxiety.* • *inability to create grant applications* • *lack of training.* • *lack of support for junior faculty.* • **lack of adequate time.** • **Lack of motivation.**	• **Limited Leadership** - Research expertise, leadership. • **Lack of adequate time.** - excessive teaching loads, • **lack of a research culture.** • **lack of Institutional support**	• **lack of funding.** • **Absence of infrastructure** • **Rewarding system** • **Intra and interdisciplinary collaborations**	• **Partnership challenge and Cultural differences (academia vs clinical)** - Anti-academic attitude - Lack of English proficiency - lack necessary research skills - Differing key performance indicators. - Being accountable to managers in both setting. - Responsibilities of every researcher and the entire faculty. - **Insufficient resources** - Competition on available time and funds. - Lack of research capacity strategies. - limited access to critical platforms

Table 2. 6: *Identified strategies and facilitators to RCB at different levels*

Individual level	College level	University level	Supra-organizational
• **Organising workload and making time for research** - work habits. - enhancing individual's commitment/motivation • **Reduced Workload,** • **External networks of research**	• **Effective leadership** - Well-defined research strategies - In-house graduate programs. - Workshops and seminars. - Research focus and Interest groups. - Mentorship • **Internal culture:** - Prioritizing research • **Institutional support** - Supportive research infrastructure. - Financial Support.	• **Faculty development** • **Collaboration and Networking forums** • **Harnessing available resource** • **Motivation** - Award and recognition, Promotion	• **Partnership** - Academic-clinical partnership - Strong leadership. - Infrastructure development.

2.7 Limitation of the Review

This scoping review may be limited by language and database. The researcher included studies published in two languages (English and Arabic) and indexed in specific databases, potentially missing relevant research published in other languages or in non-indexed sources.

2.8 Conclusion

This scoping review aimed to explores barriers and facilitators to RCB in the nursing academic context and also provides detail on a range of strategies that were implemented or recommended to help develop RCB. The findings of this scoping review revealed barriers and strategies to RCB at different levels. The review has shown that most studies focused on department-level strategies and facilitators, but little was reported at the national level. The included studies mainly focus on either describing the experiences or evaluating the implemented strategies of RCB in nursing.

Improving research culture was recognised as a vital step in RCB. The review presented various strategies for improving and developing an internal research culture, such as effective leadership, involvement in research, and research support. Further, research culture was evaluated by different metrics, such as the number of publications, the number of staff with a PhD degree, and the visibility of the research unit in the organisational structure. However, no empirical tool or framework is being used to consistently measure and evaluate research culture, although these do exist. In 2008, the Canadian Association of Schools of Nursing (CASN) developed a framework to assess and evaluate research capacity through four components: research input, research productivity, research output, and research impact (Tranmer et al., 2020). This framework could be a useful tool to identify the required elements for research capacity building within departments and institutions (Tranmer et al., 2020).

Furthermore, in different countries, such as the UK, USA, Australia, and Ireland, many authors investigated the issue of RCB, and initiatives and strategies have been suggested in the process of developing research capacity and research culture. However, the process of RCB differs between geographical settings, particularly in developing countries where little is known about the subject in nursing academic settings (Segrott et al., 2006). In a review conducted by (Segrott et al., 2006) included studies from four different geographical locations (the UK, USA, Australia, and Spain) demonstrating that the difficulties confronting each of these countries differ significantly. Therefore, future research is needed to explore and understand the barriers and facilitators to research capacity building in nursing educational institutions based on specific geographic contexts in order to develop appropriate strategies for RCB.

3 Chapter 3: Methodology

3.1 Introduction

This chapter provides a detailed description of the methodology and method used to achieve the aim of the study and to answer the research questions. The chapter starts with an overview of philosophical/assumption frameworks and justification for the paradigm I use to frame methodological decision making and approaches used within the study. It goes on to describe the study design, including details of the methods adapted to collect and analyse the data. Then, it includes a description of trustworthiness, the ethical issues raised, and how approval was obtained for this study. Finally, reflexivity was discussed.

3.2 Philosophical Assumption

Research inquiry can be approached using different philosophical frameworks based on the aims of research and the nature of the required knowledge (Blatter, 2016). Philosophical assumptions inform research design and formulate the direction of research. The two most common philosophical frameworks are the positivist and interpretivist paradigms. Both will be discussed in context of their ontological (the nature of reality) and epistemological (how to build knowledge) positions.

3.2.1 Positivism paradigm

Ontologically, positivism assumes that reality is single, which means there is only one reality, and this reality can be tested to be proven or disproven (Ryan, 2018). Epistemologically, in the positivist paradigm, knowledge is built objectively, and the researchers need to measure and observe variables to discover reality. The researchers are considered to be outsiders of the subject matter that is being investigated (Moroi, 2021). Thus, positivism is an appropriate paradigm for studies that seek to confirm or test a hypothesis numerically. Therefore, quantitative design is associated with the positivist paradigm.

3.2.2 Interpretivism paradigm:

Ontologically, the interpretivist paradigm assumes that there are multiple realities. The idea of multiple realities depends upon the fact that each person's experiences are rich and varied and reality and its interpretation, are constructed via the individual's social world (Guba & Lincoln, 1994; Ingham-Broomfield, 2015). Epistemologically, in the interpretivist paradigm, knowledge is built subjectively. The researcher will be involved in research and disclose knowledge in the context that is being explored and investigated. Thus, the interpretivist paradigm is appropriate for studies that aim to explore and deeply understand a phenomenon or issue. The qualitative approach is associated with the interpretivist paradigm.

This study aims to explore and deeply understand RCB in a specific context. This kind of aim requires rich data that could not be investigated through a quantitative approach. There is a need to understand the social context, and this cannot be undertaken through a standard quantitative instrument, such as a survey. This study was guided by the paradigm of interpretivism to build knowledge subjectively that best answers the research questions. The interpretivist paradigm is appropriate because it will provide a deep understanding of RCB in the context of the study and day-to-day life in the SA university environment. Thus, qualitative research was utilised in this study.

3.3 Qualitative Research Approach

A qualitative research design was utilised because of the requirement to examine and explore reality as a subjective and multi-faceted experience (Ingham-Broomfield, 2015). The primary interest of qualitative researchers is to understand the meaning or knowledge constructed by people in the natural setting (Yazan, 2015). Qualitative research helps to understand a phenomenon being investigated as a whole (Connelly, 2016). For this study, qualitative research helped to provide a clear and complete picture of RCB within the nursing

educational institution. Qualitative research also helped to obtain people's feelings towards the problem being investigated (Ingham-Broomfield, 2015); subsequently, this helped to comprehend the existing barriers and facilitators towards RCB. The common qualitative research approaches I have considered are narrative, phenomenology, grounded theory, ethnography, and case study.

The narrative approach aims to describe a single individual's experience, while the *phenomenology* approach aims to explore the experiences of several individuals in real-life phenomena. The two approaches are mainly focused on describing an individual's experience rather than a context. My review (Chapter Two) identified the significance of the individual in an organisational and policy context, and as such, I required a methodology that allowed this to be explored.

Another qualitative approach is the *grounded theory* which aims to generate a theory by investigating people's experiences to describe a process and how it works. This approach has a similarity with Narrative study and Phenomenology, in focussing on the individual.

Ethnography is a qualitative approach that aims to describe an entire culture of a group of people who share the same pattern or behaviour. According to Creswell and Poth (2016), ethnography is used to determine how the culture works rather than to understand an issue or problem using the case as a specific illustration. I was attracted to ethnography and its focus on culture but was also keen to explore a method that may provide a comparative element.

The *Case Study* is *"a research method that involves an in-depth understanding and analysis of a case" (Forrest-Lawrence, 2019)* p.319. The case study approach aims to explore and deeply understand an issue in its real-life context (Creswell, Hanson, Clark Plano, & Morales, 2007).

After considering all the above types and approaches, the case study approach was selected for this study because it aligns with the aim of the study as explained in the next section.

3.4 Case Study Approach

Although scoping reviews primarily aim to map the evidence and identify gaps rather than evaluate the quality of individual studies, it is still useful to perform a quality appraisal to ascertain the strength of the evidence under review.

In this scoping review, whilst charting the data, a critical appraisal of individual sources of evidence was conducted using the JBI (Joanna Briggs Institute) checklists (Joanna Briggs Institute, 2017). The purpose of this evaluation is to assess the methodological quality of a study and to ascertain the extent to which the study has considered the possibility of bias in its design, conduct, and analysis.

Generally, the methodological quality of the included studies varied. Typically, the strengths were a suitable study design and appropriate data analysis methods. Most of the studies presented provide adequate justification for their selected approaches and sufficiently detailed data collection techniques (e.g., document analysis, focus groups, and interviews.). However, some studies have limitations in terms of sample size, triangulation, reflexivity, or insufficient analytic data.

A case study approach provides rich data in real life (Stake, 1995) and focus on studying the whole context rather than individual (Priya, 2021). Schwandt (2018) stated that the case study is a useful tool to study an organisation at different levels, including the micro, meso, or macro levels. The case study approach effectively addresses complexity and organisational change, which are critical aspects of capacity development (Yin, 1994). Thus, the case study approach aligned with the aim of this study, which is to explore and deeply understand RCB within nursing educational institutions in SA.

Numerous studies have applied the case study approach to explore and evaluate RCB in nursing. For instance, McCarthy and Fitzpatrick (2008) conducted a case study approach to identify strategies and barriers to RCB in a nursing school at a newly established university in the Republic of Ireland. In their study, they also evaluated the strategies that had been implemented and the barriers to the success of RCB. Similarly, Green et al. (2006) used a case study approach to examine the initiatives to RCB in one nursing department in the UK. Green et al. (2007) also used a case study approach to evaluate the RCB development in two different nursing schools in the UK.

3.4.1 Case Study Approach Limitations

While the case study approach offers depth and insight, it has several limitations. One key issue is that the findings may not be easily generalisable to broader populations. This limitation can limit the applicability of the results to other contexts. Another challenge is the time-consuming and resource-intensive nature of the case study, which requires significant time and resources, including access to participants, documents, and other data sources. This can be a limitation for researchers with limited resources or time constraints.

This study was originally planned to include three to four case studies. Due to time limitations, only two cases were selected. These two case studies may not be fully representative of the situation in nursing colleges and departments in Saudi Arabia. This may also limit the generalisation of the finding and impact its transferability.

To address these limitations, the researcher provided a rich and detailed description of the study settings to help the reader understand the two different case studies. Furthermore, the researcher triangulated three distinct data sources (documentary analysis, interview, and observational memos) to yield thick data, which helped in the interpretation and investigation of RCB, as well as understanding how these factors influence the development of RCB in Saudi Arabian nursing colleges.

3.5 Multiple Case study Approach

This section offers a theoretical viewpoint and a justification for the use of multiple-case studies. According to Creswell et al. (2007), a multiple-case study is an appropriate approach when a study investigates one issue but illustrates the issue through multiple cases. The multiple-case study approach is generally considered more convincing because it explores the same issue or phenomenon in various contexts or locations, which helps produce a more acceptable end result (Priya, 2021). The multiple-case study approach then allows the investigator to explore similarities and differences across the cases, which helps gain insights into the issue being investigated.

Multiple case study approaches also provide an in-depth understanding of the issue by allowing the use of different data sources from different sources. This is known as Data Source Triangulation and is explained also in more detail later in the method part (Trustworthiness section). A multiple-case study approach was used to give a comprehensive understanding of RCB in the context of SA, by examining the variety within and cross cases in multiple university settings.

3.6 Method

This section of the thesis provides in-depth details about how data were collected and analysed, including sampling, data collection, data analysis, trustworthiness, and ethical considerations.

3.6.1 Sampling: Case Selections

Purposive sampling was used for case selections where the aim was to create a sample that was based upon important characteristics related to the research question or topic (Lavrakas, 2008). According to Schoch (2020) purposive sampling is an effective approach as it “allows you to focus in-depth on a phenomenon” (p. 248). I found this to be a useful method, and it gave particular advantages over convenience sampling.

The specific type of purpose sampling used was the *most-different method*. This method aims to select cases that are vary in nature to investigate a specific phenomenon (Seanwright & Gerring, 2008). This method was aligned with the multiple case study approach because it is a useful method in allowing the coverage of different cases, maximizing the variety of primary sources and consequently, getting better understand of the issue being investigated (Seanwright & Gerring, 2008).

In the SA study context, the nursing educational institutions are varied, especially in relation to the time they became established and organisational structure. As mentioned earlier in chapter 1, Saudi universities are classified into two types: well-established universities, which referred to the universities established in 2000 or before, and new established universities, which referred to the universities established after 2000.

The original plan for the study included three to four case studies, targeting both newly and well-established universities. Due to time limitations, only two cases were selected based on the above two classifications. It seemed that the two cases provided rich, and thick data which make adding extra cases may not add a significance or different data from what I found in the selected cases. These two cases are reported in the table 3.1.

Table 3. 1: *The Selected Case Studies*

Case	Setting	Foundation	Comment
1	King Saud University	1957 (well-established)	Nursing program established in 1977
2	Northern Border University	2007 (Newly established)	Nursing program established in 2007 as nursing department, then became a nursing college in 2011

Note. Details about the size of each case will be extensively described later in the case overview chapters (Chapter 4 and 6).

Within-case sampling for documents, interviews, and observational memos was integrated with the data collection section below.

3.6.2 Data Collection

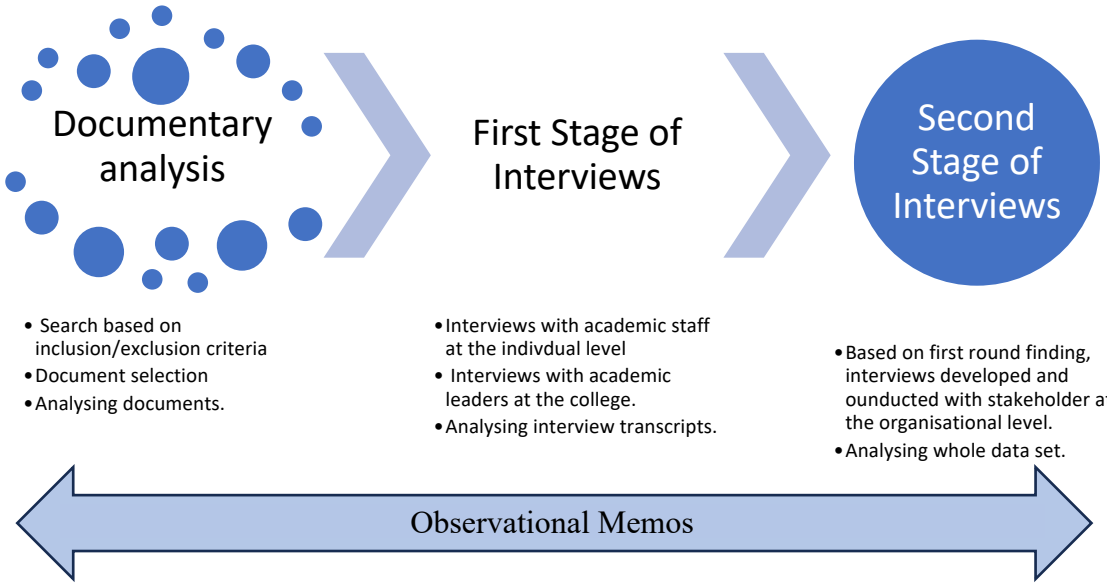
In case study methodology, multiple sources of data are required to fully capture the case under study in its complexity and entirety (Yazan, 2015). Multiple sources provide a comprehensive picture about the case and enhance data analysis by data triangulation (Patton, 1999). To better understand the cases, data were obtained from three different sources: documentary analysis, in-depth interviews and observational memos.

This multi-method approach requires a well-organised process to collect data from each source, particularly because the interview topic for individuals and college leaders was partially generated from the initial findings of document analysis as recommended by Bowen (2009). Similarly, the interview topic for university leaders is generated from the initial findings of the individual/college leader interviews as well as the document analysis. For instance, the initial findings of documents and interviews showed a lack of collaboration between departments within the university. This finding necessitated further investigation at the organizational level to understand the reasons behind this issue. As a result, the subsequent interview at the organizational level addressed this issue in the stakeholder interview topic guide.

Since the case study usually is bounded by time (Priya, 2021), the data was collected and analysed for case study one, and then the data collection for case study two commenced.

To best organise the process of data collection, the data were collected in three steps, as shown in Figure 3.1. A similar process was conducted in case study two.

Figure 3. 1: *Data Collection Process*



Each of the three data sources; documents, interviews, observation were lengthily described below:

3.6.3 Documentary Analysis

According to Stake (1995), documentary analysis is an appropriate method to collect data in qualitative case studies. Specifically, Bowen (2009) highlights how documentary analysis helps to discover insights into the phenomena or issue being investigated and suggests that data obtained can help generate the questions for the interview or help focus the situations to be observed (Bowen, 2009). Document Analysis can also help giving insight into the vision of the cases and understand related policy (Dalglish, Khalid, & McMahon, 2021).

3.6.3.1 Documentary Sampling

Purposive sampling was used to identify documents that were most likely to provide rich and relevant information. In this study, documents were selected based on their relevance to the study`s aim and research questions (Bowen, 2009). Therefore, any documents relating to

nursing research activities and related to overall research strategies within the case study site were included. The assessment of each document was either ‘comprehensive’ or ‘selective’ depending on the content of the documents and their relevance to the research’s aim. The timeliness of documents was also considered.

3.6.3.1.1 Documents Source

The research question of this study determines the sources for the documents which also related to the context of the research topic (Frey, 2018). The selected documents for this study were obtained primarily from two sources: public electronic sources such, as the university website, college website, University library and database. Documents from the university or college that were given in response to a request made by the researcher in advance such as committee minutes.

3.6.3.1.2 Inclusion Criteria for Documents Selection

A range of documents were assessed and evaluated to gather data in each case. The documents include, but are not limited to, strategic plans, organisational structures, job descriptions and other research activity documents (such as research committee and journal club minutes). Table 3.2 reports the inclusion criteria for document selection.

Table 3. 2*: Inclusion Criteria for Documents Selection*

Criterion	Description
Age of document	Last 5 years.
Context	Case study setting (NBU, KSU)
Type of data	Primary source and secondary source
Types of Documents	Policies and regulations, meeting minutes and agendas, brochures and pamphlets, webpages, event programs.
Language	Arabic and English
Units of meaning (i.e., needed elements in text)	Research, publication, vision, mission, research committee, fund

Based on the above inclusion criteria, the documents were selected for this study. To ensure the collection of documents is both accurate and relevant to the research question, it is essential to record key details, or "demographics," for each document (Frey, 2018). Thus, I developed a data entry sheet for which includes document number, document title, author, focus or main topic, target audience, location, length of the document, type of document, unique physical characteristics of the document. See Appendix F for sample of document data entry sheet.

3.6.3.2 Sample Size of the Documents

The sample size was not pre-established but was decided based on the concept of data saturation. Data saturation is defined as the point at which no new information or themes are revealed from the data. In qualitative research, sample size is commonly determined by the concept of data saturation (Guest, Namey, & Chen, 2020). The recurrence of themes, redundancy in information, and the absence of new data are indicators of reaching saturation (Saunders et al.).

Documents were collected and analysed iteratively. Emerging themes were identified and categorised during the analysis of each document. The process continued until the analysis of further documents no longer produced new themes or insights.

In case study 1, saturation was identified through the recurrence of themes across multiple documents. After reviewing the 16th document, themes started to recur frequently, and by the 27th document, no new themes were observed, indicating that saturation had been reached.

In case study 2, saturation was identified through the repetition of themes across multiple documents. After reviewing the 13th document, themes began to recur frequently, and by the 15th document, no new themes were observed, indicating that saturation had been reached

3.6.4 Participant Interviews

In qualitative studies, interview is the most common way for collecting data. Using interviews to collect data allows researchers to gain valuable insights and delve deeply into the personal experiences, opinion, and perspectives of others. (Qu & Dumay, 2011). This could not be done through the focus group method because of the potential biases or distractions that can arise in focus groups due to the influence of group dynamics on participant responses (Acocella, 2012). In this study, interviews were used to help gain a deeper understanding of the RCB in nursing educational institutions.

A semi-structured interview approach was selected because of its flexibility in allowing the interviewer or researcher to probe and follow up on questions, which helps obtaining the most thorough and accurate responses from the interviewee (Qu & Dumay, 2011). It also provides flexibility to allow a researcher to pursue particular lines of inquiry as the study unfolds and particular theoretical or conceptual areas of interest emerge.

In each case study, the interviews were carried out in two stages. In the first stage of the interview (individual and college leaders), the interview topic guide was generated based on the findings of the scoping review (chapter 2) and the initial findings of document analysis. In the second stage of the interview (with stakeholders), the interview topic guide was generated based on the initial findings of the first stage of interviews. The interview topic guides for both stages are available in Appendix G.

The length of these interviews was in the range of 30–60 minutes. Interviews were conducted remotely due to the Covid pandemic and university closures in Saudi Arabia at the time of data collection. All interviews were digitally audio-recorded with participants' consent. The Zoom videoconferencing platform was used to conduct the interviews. Zoom has been shown to be an effective tool for performing qualitative interviews (Archibald, Ambagtsheer, Casey, & Lawless, 2019). In Zoom, the audio was transcribed automatically. To increase the

accuracy of the auto-transcription, the researcher undertook a process of iterative listening to the recording, checking the auto transcript and correcting and adding any missing words while doing so. This also allowed the researcher to become increasingly familiar with the data in the transcript, which is explained further in the data analysis section.

The online interviews, however, do not allow the observation of nonverbal communication such as body language, facial expressions, and tone of voice. These cues are important for gaining useful insights into the thoughts and feelings of the respondents. Furthermore, technical complications can arise at any point throughout the interview. During interviews in my study, a significant number of participants chose to turn off the camera, which limits observing any nonverbal cues.

The interviews were conducted in the English language since this is the main language used in teaching in nursing schools in Saudi Arabia and all faculty members can speak English fluently. Another reason for using the English language in interviewing is that the nursing schools employ many faculty members whose first language is not Arabic.

3.6.4.1 Interview Sampling

Purposive sampling was used for selecting participants within each case study site. Robinson (2014) asserted that in purposeful sampling, researchers choose only certain individuals that they believe are suitable for participation in the sample. Therefore, the researcher chose participants who were most likely to provide rich, comprehensive and relevant information about the RCB at nursing educational institutions. Building upon this sampling strategy, the researcher developed specific inclusion criteria aligned with the study's aims and objectives.

3.6.4.1.1 Inclusion Criteria of Interview Participants Selection

The researcher developed the selection criteria based on the research aim and objectives. In order to explore RCB at various levels, interviews involved a diverse range of participants, including, academic staff at the individual level, academic leaders at the college level, and

stakeholders at the organisational level. The selection considered factors such as seniority, speciality, academic rank, and leadership/managerial position. This variability in the sample provided a deeper understanding of RCB within each case study site. Table 3.3 provides more detailed inclusion criteria for interview participants.

Table 3. 3: *Inclusion Criteria for Interviews*

	Type of participants	Description/ inclusion Criteria
1	Academic staff	Faculty member who occupies a permanent academic position at the college of Nursing such as a Professor, an Associate Professor, an Assistant Professor, a Lecturer, a Research Assistant, and a Teaching Assistant.
2	Nursing academic leaders	Faculty member who holds a leadership position at the college level.
3	Stakeholder	Leader at the university's highest level like, Scientific Research Deanship

3.6.4.2 Sample Size of Interview Participants

In qualitative study, the ideal sample size is often determined by the concept of Data Saturation—the point at which no new information or themes are revealed from the data. In this study, the sample size was not pre-established but was decided based on the concept of data saturation.

In Case Study 1, I noticed that by the seventh interview, themes and information began to recur, and by the eleventh interview, no new themes or information surfaced, indicating that I had reached saturation and had stopped interviewing more participants.

In Case Study 2, I noticed that by the sixth interview, the information began to recur, and by the tenth interview, no new information or themes surfaced, indicating that I had reached saturation and had stopped interviewing more participants.

3.6.4.3 Interview Recruiting Process.

The first stage of the interview was conducted at the individual and college levels. Also, an invitation email was sent, on my behalf, to the email list of academic staff in each setting.

The participants at the college level (college leaders) were invited to participate in the study via a direct email which included the aim and objectives of the study and participant information sheet. Then, based on the finding from first stage, the second stage of interview was developed and conducted at the organisational level. The participant at organisational level were invited to participate in the study via a direct email which included the aim and objectives of the study. All above correspondence emails were sent, on my behalf, by the research coordinator at case study 1, and by research unit manager at case study 2.

For those who showed an interest in participating, information sheets and consent forms was attached in the invitation email. When filling out the consent form, demographic information such as gender, nationality, job title, and years of experience was also collected.

Although I used the exact recruitment process in both cases, I observed that the recruitment in the second case was faster than the first setting. This could be linked to the positive research culture among academic staff in the second setting because it is well-established university compared to the first setting which is newly established. Also, this is reflecting the value of research among academic staff and their awareness about the important of participating in research.

3.6.4.4 Reflection on Interview Process.

The researcher took into consideration the possibility that his own questions and interactions with the participants during the interviews might have influenced the participants` responses. My previous work as an academic nurse may have shaped my understanding of some challenges and facilitators that academic staff face in conducting research. Despite the fact that this insider knowledge enabled me to investigate more deeply into specific issues during the interview, it also necessitated continuous reflexivity to prevent my preconceived consumption from influencing or directing the questions I asked participants.

I acknowledged that my experience as an academic nurse may shape the interview topic guide. However, in order to address this issue, I developed neutral questions that enable participants to express their thoughts freely without being influenced by leading questions. For instance, the topic guide for individual academic staff included a question that asked, "What is your experience in getting access to available resources?" This question allowed participants to provide their own experience, whether it was positive or negative. In addition, I engaged in discussion with my academic supervisors to refine and improve the topic guide.

3.6.5 Observational Memos

The data collection process was further enriched by observational memos that I collected throughout the research process.

The memos drawn from observations I made during data collection (documents and interviews) and the analysis process. Specifically, Observational memos allowed immediate recording of thoughts, feelings, comments, and interpretations, that could otherwise be forgotten later (Barker, 1980). The observational memos enriched data by providing depth and insight that interviews or documents alone may not capture. The memos were also useful in contextualising other methods of data collection, providing a nuanced understanding of the research culture and environment. The data from memos were integrated with the data from the interviews and documentary analysis. To maintain organisation, each memo was identified by number and title to facilitate tracking all memos. There was no stopping point for collecting memos because the observations were an ongoing part of the research process, including data analysis and finding interpretation.

3.7 Data Analysis

3.7.1 Unit of Analysis

Research capacity building within nursing educational institutions in Saudi Arabia.

3.7.2 Type of Analysis

Qualitative studies seek to find a meaning of the collected data which can be reached by finding a pattern (Stake, 1995). Thematic Analysis was selected because it can seek, find and describe patterns from different data sets. Thematic Analysis is compatible with the constructivist paradigm of the study and can provide rich data on phenomena being investigated (Braun & Clarke, 2006). Thematic analysis can also provide a comprehensive understanding in case studies because it has the flexibility for completing data analysis both within and cross data sources (Braun & Clarke, 2006). The six phases of thematic analysis framework, developed by (Braun & Clarke, 2006), is utilised to analyse data. The six stages include:

Stage 1: Familiarizing yourself with your data.

In the first stage, researchers immersed themselves in the data by repeatedly reading and becoming familiar with the content. This stage helped understand the data in context and detect possible patterns or interesting elements. I have conducted the interviews and then transcribed the recording to text which made me familiar with data. Repeated reading the transcript helped me in being more familiar with data.

Stage 2: Generating Initial Codes.

Researchers systematically segment the data into meaningful units (codes) that capture key concepts, ideas, or patterns. This process involved highlighting, labelling, or tagging relevant sections of the data.

Stage 3: Searching for Themes

Researcher identified commonalities, patterns, or recurring themes across the coded data. Themes emerged through the process of data immersion, where researcher compared and contrast different codes to identify overarching patterns or concepts.

Stage 4: Reviewing Themes

Researcher reviewed and refined the identified themes, ensuring they accurately represent the data and capture the richness and complexity of participants' experiences or perspectives. This step involved examining the coherence and consistency of themes and their relevance to the research objectives.

Stage 5: Defining and naming themes.

Researcher defined and named each theme to encapsulate its essence and meaning. This involved articulating the central idea or concept represented by each theme and providing clear definitions or descriptions.

Stage 6: Producing the report.

Researchers write up the thematic analysis, describing the process of data analysis, presenting the identified themes, and providing illustrative examples or quotations from the data to support each theme. This step involved synthesizing the findings and providing a coherent narrative that communicates the key insights derived from the analysis.

Quirkos software was used to support data analysis. Quirkos software can help the researcher with the organisation and categorisation of the data. One of the most important strengths of Quirkos is that it provides a visual representation such as word clouds, bubble charts, and hierarchical diagrams, which assist in the identification of patterns, themes, and correlations within their data in a straightforward and accessible manner. These visual representations

could help in the interpretation and communication of findings. In addition, the flexibility of Quirkos in creating, editing, and integrating codes facilitates the analysis process and the development of initial patterns and themes. However, when importing data from a PDF document, sometimes changes occur in the text and word arrangement, which requires a double check to ensure all texts are displayed correctly.

Given that this study employed a multiple case study approach, the analysis has unfolded in two stages: within-case analysis, which focuses on examining each individual case, and cross-case analysis, which compares and synthesizes findings across the cases.

3.7.2.1 Within-case Analysis.

Individual cases was analysed for a within-case thematic analysis in the weeks after completion of data collection at the case study site (Stake, 1995). The data analysis for each case included the document, interview, and observation data mentioned above.

3.7.2.2 Cross-case Analysis.

In the second stage, cross-case analysis was used to understand the similarities and differences between the cases (Crowe et al., 2011). Cross-case analysis provides deeper insight into the issue being investigated and helps in full understanding of the phenomena. Thematic analysis was also used to analyse data across the cases (Braun & Clarke, 2006) using the six phases of thematic analysis as explained above.

3.7.3 Reflection on Data Analysis:

During data analysis, my own experiences as an academic nurse may influence my interpretation of the participants' responses. Although my extensive experience provides a distinctive perspective, it also provides possible selection biases. Therefore, throughout the data analysis process, I have intentionally attempted to maintain awareness of these biases. For example, in the coding and theme stages, I discussed the initial codes and themes with my academic supervisors. This discussion helped in evaluating these themes and making sure

that these developed themes were grounded in the data and were not influenced by my cultural or contextual background and conceptions.

3.7.4 Trustworthiness

According to Connelly (2016) **"***Trustworthiness or rigour of a study refers to the degree of confidence in data, interpretation, and methods used to ensure the quality of a study" (p.1).* Lincoln and Guba framework is used to evaluate qualitative study. Lincoln and Guba (1985) outlined different strategies (criteria) of trustworthiness in qualitative research; transferability, credibility, dependability and confirmability. Each was outlined below, along with plans to ensure that trustworthiness was considered at each stage of the research process.

3.7.4.1 Transferability

This term refers to the ability to transfer qualitative findings from one context to another. Transferability can be achieved by providing a thick description of the methods and findings. To meet the transferability in this study, the selected approach, strategies, and technique for data collection were thoroughly clarified in the methodology chapter. Additionally, a comprehensive and transparent description of the cases was presented in a separate two chapters to make sure that all related information was included. Each of the two chapters encompassed relevant details such as its location, size, context details, and the current condition of the research.

Furthermore, in the results chapters, all included documents were comprehensively described, including their type, source, length, and summary. In a similar vein, all research participants' demographic data is included in the results chapters. This enables the readers of the study to make judgements about the ways in which they might consider the findings in relation to their own environment or setting.

3.7.4.2 Credibility

Korstjens and Moser (2018) suggest some strategies to enhance the credibility of the findings, such as triangulation, prolonged engagement, persistent observation, and member checking. However, Korstjens and Moser (2018) stated that not all of these strategies need to exist in each study. Triangulation refers to using different data sources, investigators, and/or methods of data collection (Korstjens & Moser, 2018). In this study, triangulation was presented in three different forms. First, data triangulation by using multiple sites (cases) to collect data (Stake, 1995). Second, data source triangulation by using different source/methods to collect data within each case, which includes appropriate documents, interviews, and observational memos. Last, triangulation within each source (interviews and documentary analysis). The interviews involved three different levels of participants, which also demonstrate data source triangulation in the interview data (Korstjens & Moser, 2018). In a similar vein, the included documents were varied and involve different types of documents at different levels, such as organisational policy, college strategic plan, committee meetings, and annual reports.

3.7.4.3 Dependability

Dependability refers to describing the research process clearly, with details about the rationale for theoretical and methodological choices made by the researcher. Dependability helps other researchers (or readers) examine the study and its findings (Nowell, Norris, White, & Moules, 2017). The Audit Trails strategy can demonstrate dependability by providing a rationale for the research process (theoretical and methodological choices) and allowing readers to evaluate the study (Nowell et al., 2017). In doing so, the research tried to support the selected framework and methods by providing a full description and rationale for the research process from design to implementation.

3.7.4.4 Confirmability

Confirmability aims to ensure that finding is grounded in the data (Nowell et al., 2017). Audit Trails strategy was used to demonstrate confirmability by providing complete information on how decision-making in interpreting the findings and data management. Nowell et al. (2017) stated that confirmability is built when credibility, transferability, and dependability are all met. A summary of implication of trustworthiness is describe in Table 3.4.

Table 3. 4: *A summary of implication of trustworthiness*

Quality/ trustworthiness aspects	Case study /strategies Tactic	Stage in which tactic occur
Transferability	**Providing a thick description of the case** (context details, size, etc,)) the used methods for data collection and analysis (case selection, sampling etc,)	Method, Case Overview Result chapters
Credibility	**Triangulation of Data collection:** Use multiple case study approach. Use multiple sources (interview, document, and observation. **Triangulation of data sources:** The interviews include variable level of participants (nursing academic staff, nursing academic leaders, stakeholders) The documents include policy, committee munities and annual reports. **Review my draft case study report.**	Data collection, and Data analysis
Dependability	providing a rationale for the research process	Research design and data collection,
Confirmability	providing complete information on how decision-making in interpreting the findings and data management	Research design and data collection, and data analysis

3.8 Ethical Considerations

Ethical considerations are crucial in qualitative research to ensure that participants are treated with respect, dignity, and fairness throughout the research process. The following ethical considerations were taken into account:

3.8.1 Consent Form

All participants at the case study sites provided a link to access the information sheet and consent form. I used Qualtrics XM (a management software platform) to create the links. The online information sheet extensively explains the project's aims, how confidentiality and anonymity will be maintained, and that all participants have the right to withdraw from the study at any time. At the end of the information sheet, there is a link to the electronic consent form that must be signed online by participants before data collection started. A sample of information sheet and consent form are available in the Appendix I and J.

3.8.2 Confidentiality and Anonymity

Participants were assured of confidentiality during data collection and analysis and, assigned a pseudonym to protect their identities, and the data was not connected to the participant's name but university name. All documents, including transcripts, audio files, and observational memos, were coded using the participants' pseudonym. However, the consent form, which contained personal identifiers, was stored on an encrypted USB flash drive in a locked cabinet in the participant's private office. The participants had the choice to decline the use of video recordings, and their contact information will be destroyed after the study is complete. All participant data was kept strictly confidential and was only accessible to the researcher. The recording files were transcribed and immediately anonymised, and the data was on a computer that was password protected and that only the researcher had access to.

3.8.3 Minimising Harms to the Participants

The researcher sought to avoid any physical or psychological harms for the participants. The study questions might make participants feel uncomfortable, and they had the right to withdraw at any time until the data analysis begins. Also, the participant had the right to skip any uncomfortable questions. The participant had the right not to use the video function during the virtual interview.

Furthermore, the data collection stage was during the COVID-19 pandemic. To avoid any harm to participants, the interviews were conducted remotely (via a video conformance platform) to enhance the social distance recommended by national policy. A project's designated safeguarding was available to be contacted for any concern or incident resulting from participation in this study.

3.8.4 Reflection on Administrative Aspects of the Ethics Applications

Ethical approvals for the study were obtained from the University of Sheffield Research Ethics Committee and also from the ethics committee for each of the selected case study sites. In each case study, they required submitting an official request aligned with the research proposal and the approval of the institution where the researcher belongs (which is the University of Sheffield).

The Sheffield ethics approval was submitted during the COVID-19 pandemic, which meant that more time, forms, and processes had to be taken to get the final approval. The ethics committee expressed serious concerns about face-to-face interactions and the potential risks of harm to participants and investigators as a result of COVID-19. In adherence to this concern and the recent policy at the University of Sheffield, which imposed restrictions on face-to-face interactions for data collection during that period of the pandemic, I was required to make certain adjustments to my research protocol and methodology, specifically regarding observation and interviews. I decide to replace the face-to-face interview to take place virtually using an appropriate video conferencing platform.

Furthermore, due to Saudi Arabian government regulations prohibiting face-to-face communication as well as University of Sheffield policy limitations, the field observation could not be carried out. As an alternative, any observations made throughout the research, data collection, and data analysis were recorded in the observational memos. To compensate for the absence of observation and to provide additional insight into the issue, a second

interview phase was developed. Thus, additional stakeholder participants were recruited at a higher level in the organisation (such as the deanship of scientific research or postgraduate studies). These extra interviews at a higher level could add to the topic being explored. In addition to this interview, the observational memo was used to record any observations made throughout the research process, data collection, and data analysis.

The process of getting ethics approval lasted around 5 months (June 2021 to November 2021). This delay in getting approval was due to the pandemic and its new, revised, and updated roles and regulations. As a result, it had an impact on the starting time of data collection as specified in the timeline for my PhD. In addition to this, the study sites in Saudi Arabia require approval from the institution where the researchers belong (in this case, the University of Sheffield). Thus, it was impossible to submit an ethics application until I received my ethical approval here in the UK.

However, to decrease the sequencing of this unavoidable delay caused by COVID-19, I worked on the requirements for each case application and prepared the necessary paperwork for ethics applications while my ethics were being processed at the University of Sheffield. This was quite useful in reducing time and speeding up the case ethics application process. Some prerequisites included taking the Research Ethics and Integrity course in case settings and completing associated tests, which I completed while processing my ethics application. After receiving ethical approval from the University of Sheffield in November 2021, I submitted site ethics applications. In the first case study, the application was submitted in November 2021 and approved by mid-December 2021. The second case study was submitted in November 2021 and approved in January 2022. Ethical approvals are available in Appendix H.

3.9 Reflexivity

Reflexivity refers to the researcher's awareness of their own beliefs, biases, assumptions, and experiences that may influence the research process and findings. Reflexivity is an essential component of qualitative research. (Rankl, Johnson, & Vindrola-Padros, 2021). In this study, reflexivity played a crucial role in shaping various stages of the research process, including the formulation of research questions, ethical approval, data collection, analysis, and interpretation.

As the primary investigator of this study, my own background and experience as a nursing academic staff member influenced the direction and focus of the research topic. The interest in this topic (RCB in a nursing academic setting) was developed as a result of personal experience as an academic nurse over five years.

It is crucial to recognise that my positionality as a researcher may introduce biases or predispositions that could influence the research process and related decision to study approach and data collection methods. For instance, my professional background and experience may predispose me to certain assumptions about the challenges and facilitators related to research capacity building in nursing colleges. This experience may shape the research questions and how to answer them.

Moreover, my interactions with participants, such as my colleagues in case study 1, may be influenced by pre-existing professional relationships or institutional dynamics. Being embedded within the same academic community under investigation provided me with unique insights into the topic under investigation. However, it also posed potential biases that needed to be acknowledged and addressed throughout the research process.

To mitigate the potential impact of my biases, I have undertaken several measures throughout the research process. Firstly, I have engaged in ongoing reflexivity, continuously reflecting on my perspectives, assumptions, and reactions to the data. This process has allowed me to remain open-minded and receptive to alternative viewpoints that may challenge my initial assumptions. Secondly, I have employed various data collection methods to capture a diverse range of perspectives within the nursing college context. These methods include interviews, document analysis, and observational memos, which enable the triangulation and validation of findings from multiple sources. Thirdly, I have sought feedback and input from my academic supervisory team throughout the research process. For example, I shared preliminary analyses with my academic supervisors to gain an outside perspective that could help me identify potential biases and challenge my interpretations. By soliciting external perspectives, I aim to enhance the credibility and trustworthiness of the study findings. Finally, I have maintained transparency in reporting findings. Transparency in reporting findings by documenting the methodological decisions, researcher biases, and any challenges or limitations encountered. This transparency enhances the credibility and trustworthiness of the study, allowing readers to critically evaluate the findings within the context of the research process.

In summary, reflexivity played a vital role in this study by promoting transparency, rigour, and validity. By acknowledging and critically examining the researcher's role in shaping the research process and outcomes, this study aims to contribute to a more nuanced understanding of research capacity building among nursing academic staff. Despite these efforts, it is essential to acknowledge that complete objectivity may be unattainable, and my subjective positioning as a researcher inevitably influences the study. However, by transparently addressing my personal reflexivity and implementing rigorous methodological strategies, I strive to uphold the integrity and validity of this research.

3.10 Chapter Conclusion

This chapter provided a detailed description of the methodology and method used to achieve the aim of the study and to answer the research questions including ethical considerations. The next chapter will present an overview about the context of case study one.

4 Chapter 4: Case 1 Overview

4.1 Introduction

This chapter presents a broad overview of Case Study One. Case study one is a nursing college in a newly established university in Saudi Arabia. The chapter starts by providing general information about the university. It then describes the nursing programme, its development, the type of nursing programmes delivered, the demographic data about staff and students, and details the research activity in the college. Finally, it describes how access to the site was gained.

4.2 University Overview

Before 2007, in the northern border region of Saudi Arabia, there were a few independent colleges that were affiliated to either the Ministry of Education, (such as Teachers College, which was established in 1988, and Biology College, which was founded in 2005) or to the Ministry of Health, (such as Nursing College and Pharmacy College, which was found in 2003). Upon the university's foundation in 2007 , all these independent colleges became integrated into the University.

The University began with two main campuses, the Male Campus and the Female Campus, both of which were located in Arar City (Arar city is the administrative capital of the northern border region). A year later, the university opened two branches in two different cities in the northern border region.

The university currently has thirteen colleges, four of which are in the medical and health science field. These colleges include the College of Medicine, the College of Pharmacy, the college of nursing, and the College of Applied Medical Sciences, which includes the departments of Medical Laboratory Technology, Clinical Nutrition, and Physical Therapy. The University has over 16,000 students, 1119 academic staff, and 700 other staff. The university provides bachelor's degrees and diplomas in a range of theoretical and scientific disciplines. The University also offers numerous master's degrees in a variety of theoretical

and scientific fields including physics, education, computer science, and Arabic. (Deanship of Postgraduate Study, n.d). However, there is no master programme within the health science colleges. The university has not yet established any PhD programmes.

4.3 College of Nursing

4.3.1 History of the nursing Program

Prior to 2007, a nursing programme was taught in the Nursing Department of the Health Sciences College which was affiliated with Ministry of Health. The program provided a 3-year diploma in nursing and was exclusively for females.

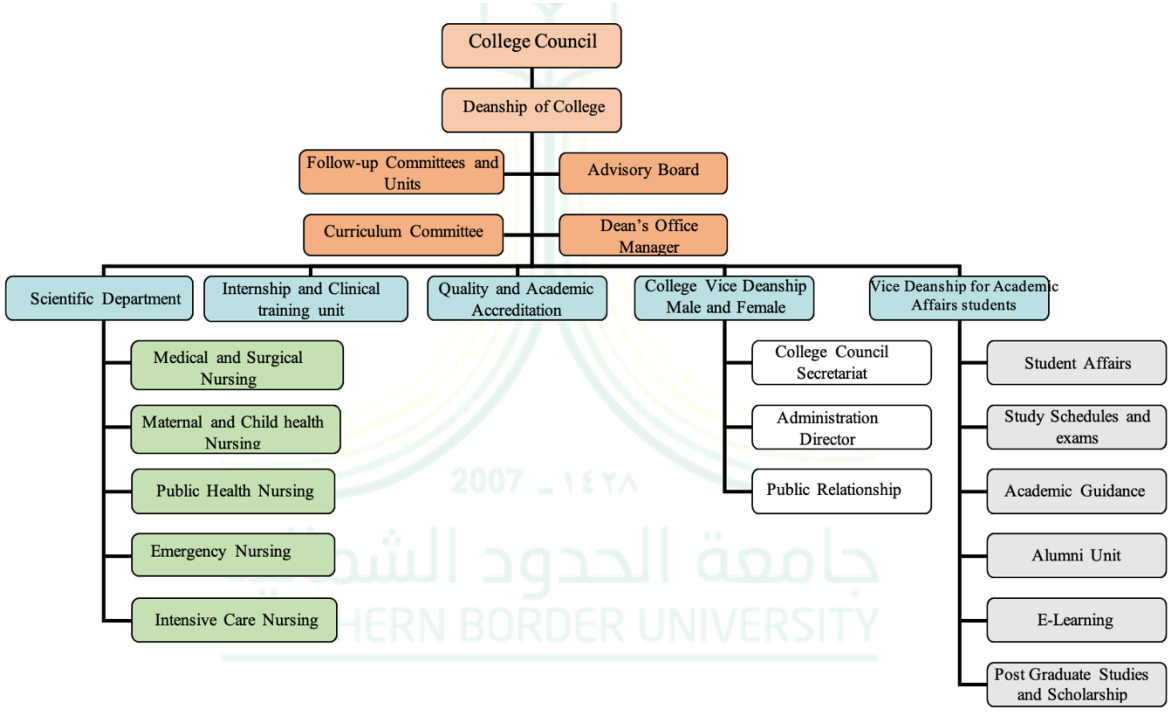
When Northern Border University was established in 2007, this nursing department was integrated within the university in the female Campus. A Nursing Department within the Applied Medical Sciences College was created and began developing the nursing programme to award bachelor's degrees in nursing which was also exclusively for females.

In July 2011, the Department of Nursing was separated from the Applied Medical Sciences College to become the “college of nursing” and it was assigned its own dean and managerial staff. The approval for training males was obtained but this nursing programme did not start accepting male students until 2020 when the first 34 male students were enrolled. The new male nursing programme is located at the Male campus in same building as the college of medicine. A new building for the college of nursing is still under construction, as of April 2022, and is expected to be completed in 2024. Although female and male staff are working separately and not sharing the same building, female faculty share some teaching responsibilities on the male campus, and vice versa.

The college of nursing has five departments: Public Health and Community Nursing, Maternity and Paediatric Nursing, Medical-Surgical Nursing, Emergency, and Critical Care Nursing. The college of nursing has a research committee which is responsible for all

research activities at the college. Full description of the organisational structure is available in figure 4.1

Figure 4. 1: *Nursing College Organisational Structure*



4.3.2 Nursing Programmes

Currently, the college of nursing provides two nursing programmes:

First program: This is a regular nursing program. Enrolment in this program takes place after students finish high school and is based on the standard conditions and criteria related to college enrolment. The duration of the programme is 5 years in total, 4 years, (provided that the student completes 144 credits hours,) followed by a one-year internship. This programme is available for both male and female students.

Second program: This is a Bridge nursing programme which designed for pre-registered nurses who want to continue their education and transfer to a bachelor's degree in nursing. The student must complete 84 credits hours followed by a six-month internship. This program is available for female students only.

The postgraduate programme in nursing is not developed yet although the college are in the process of designing postgraduate programs in nursing (Master's degree and Postgraduate diploma). The potential postgraduate program will be: Advanced Nursing MSc in the field of community nursing.

4.3.3 Nursing Faculty members

As of April 2022, the total of faculty members is 36 with varied academic ranks. This includes faculty staff who have been granted a full scholarship and are now studying abroad. Table 4.1 provides a full description of faculty members along with their academic rank and department.

Table 4. 1: *Nursing Faculty Members According to their Rank and Department*

Academic Rank	Public Health	Med/Surgical/	Maternity	Critical Care	ER	Total
Teaching Assistant	2	2	2	3	1	10
Lecturer	7	3	5	1	0	16
Assistance prof.	3	2	2	1	1	9
Associate prof.	0	0	0	0	0	0
Full prof.	1	0	0	0	0	1
Total	13	7	9	5	2	36

Despite the fact that the programme was initially solely for females, the college began appointing male faculty members in 2011 as an initial step towards developing a male nursing programme. The college appointed the first male faculty member as a Teaching Assistant, and he was subsequently given a full scholarship to pursue a master's and a PhD in nursing. The number of staff members according to academic rank and gender is shown in Table 4.2

Table 4. 2: *Distribution of all faculty members according to Gender, and Academic Rank*

	Current Faculty Members					Academic staff Studying A broad	Total
	Full Prof.	Associate Prof.	Assistance Prof.	Lecturer	Teaching Assistant		
Male	1	0	0	0	0	3	4
Female	0	0	9	13	3	7	31
Total	1	0	9	13	3	10	36

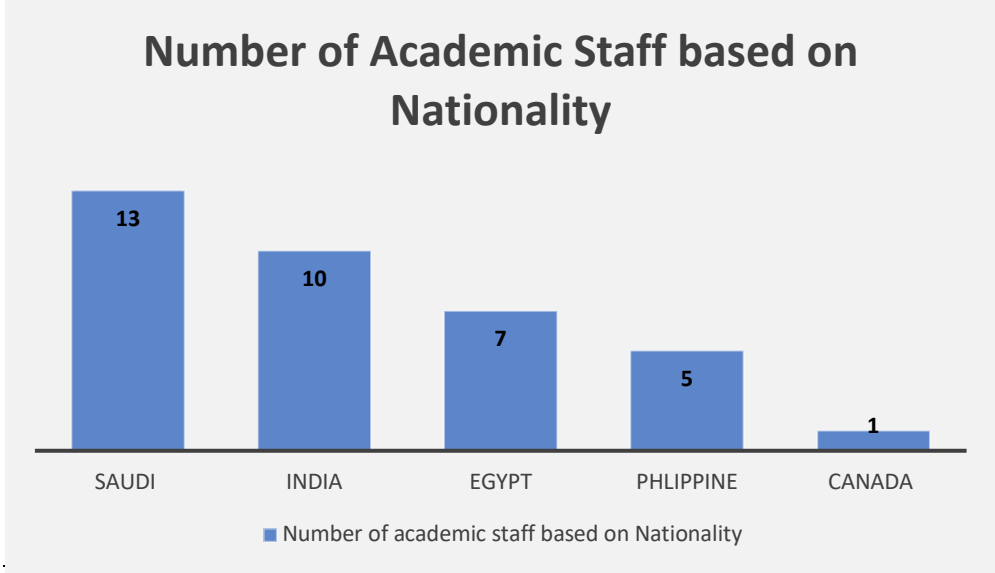
4.3.3.1 Faculty Studying a Broad

The college provides a full scholarship for Saudi Academic staff to study master and PhD. This scholarship is funded by university and provide opportunity to advance carrier by obtaining higher study level. The nursing college relies on this scholarship program due to the lack of PhD nursing program in SA. In 2022, 10 academic staff members study abroad in various countries, such as the UK, USA, and Australia. Three individuals are currently pursuing doctoral degrees. Two are in the United Kingdom, while one is in the USA.

4.3.3.2 International Faculty member

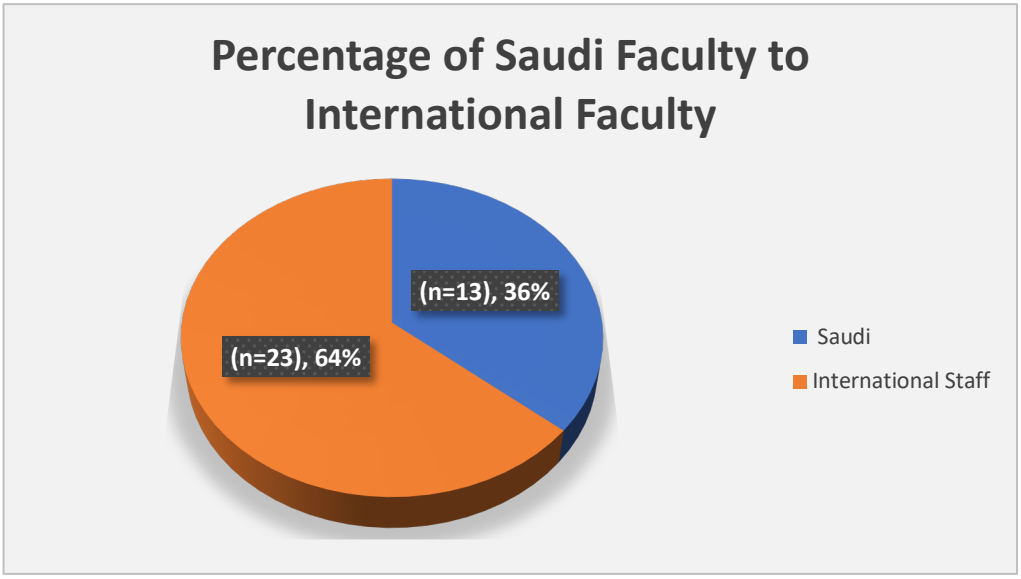
There is also geographical diversity of the nursing faculty members, who come from countries including India, Egypt, the Republic of the Philippines, and Canada (Figure 4.2). Figure 4.3 shows that more than half of the faculty members are international.

Figure 4. 2: *Academic staff based on Nationality.*



Note. Date was collected from Annual report 2021.

Figure 4. 3*: Percentage of Saudi Academic staff to International Academic Staff.*



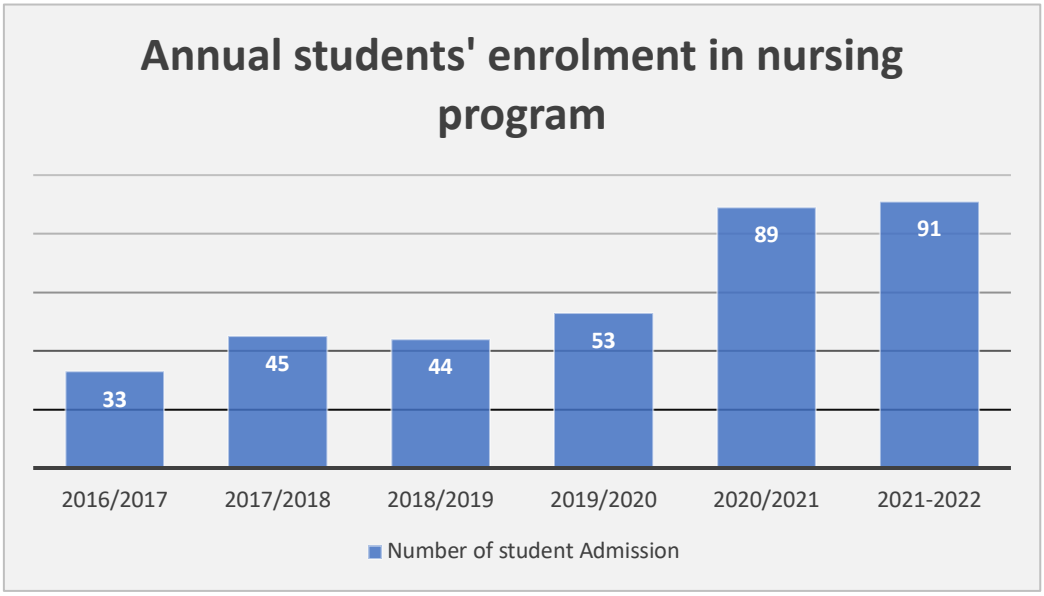
Note. Date was collected from Annual report 2020-2021

4.3.4 Number of Students in nursing Programme

The number of students enrolling in nursing programmes has increased significantly over the past three years. This increase aligns with the country's vision to increase the number of

nurses to cover the expected nurse shortage by 2030. Figure 4.4 shows the number of students' enrolling in nursing programmes between 2017 to 2022.

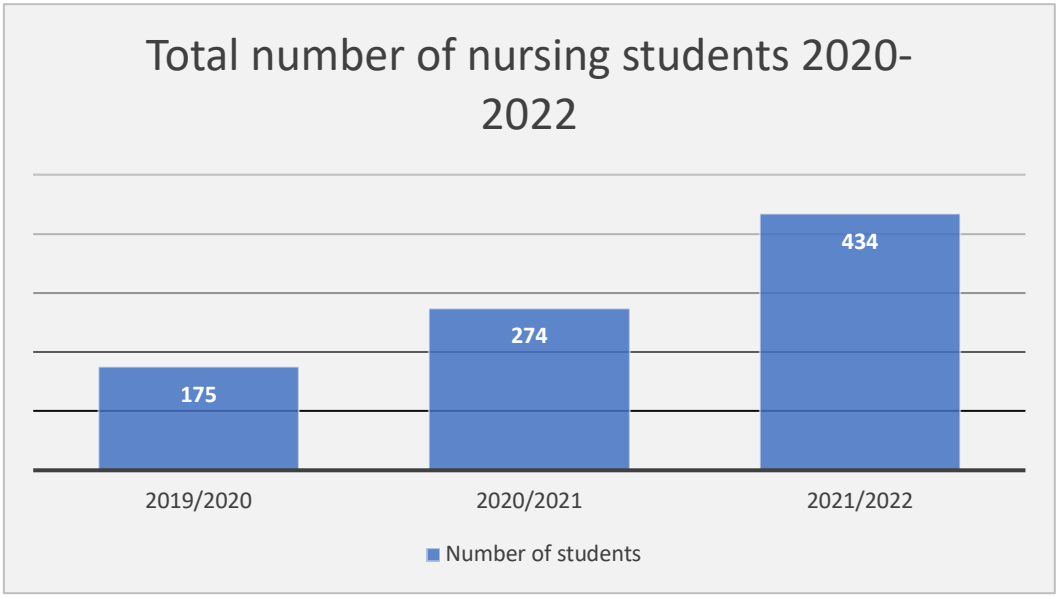
Figure 4. 4: *Number of students enrolment based on Academic year.*



Note: Data was generated from Annual Report 2020-2021

As a result of the increased number of students enrolling, the total number of current students in the nursing department has significantly increased in recent years as seen in Figure 5.5

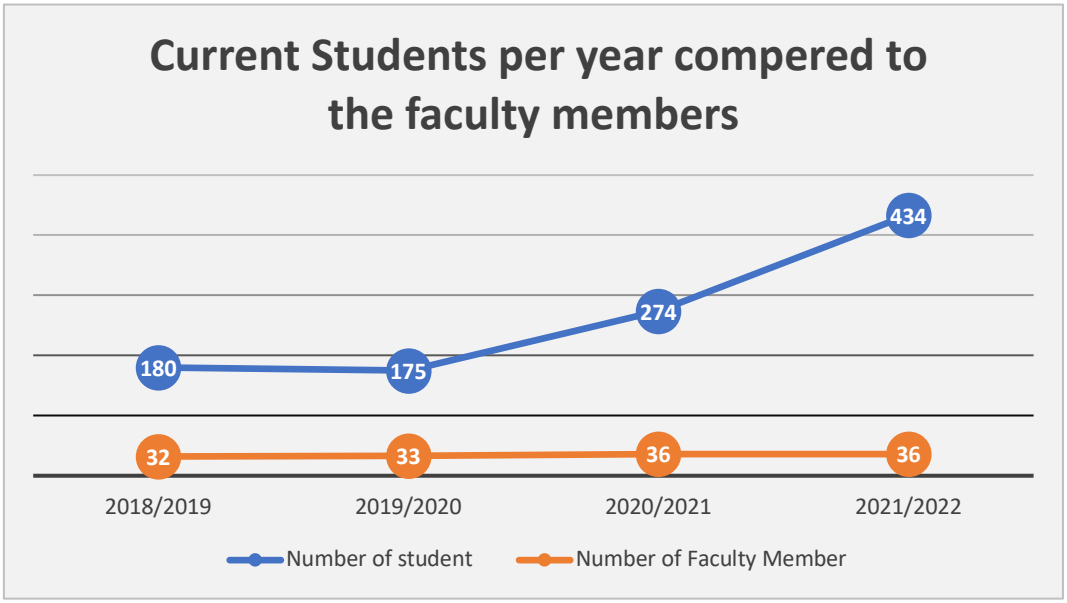
Figure 4. 5: *Total Number of current students per year*



Note. Data was generated from Annual Report 2020-2021 and college website.

Figure 4.6 provides a comparison between the number of current students and the number of faculty members.

Figure 4. 6: *Current Students per year compared to the faculty members.*



. *Note.* Data in the chart was generated from: Doc.13.College Annual Report and college website.

4.4 Research Productivity

4.4.1 Deanship of Scientific Research

The Deanship of Scientific Research seeks to foster a research culture, maximise the university's research output, and increase the university's competitiveness in strategic fields among national, and international universities. (“Deanship of Scientific Research”, n.d). According to the university database, since 2008, the university's faculty members contributed to a total of 1957 published articles in the Web of Science database, and there were 10569 citations of those papers. in addition to the 1957 in Web of Science, there have been 1594 published scholarly papers in Scops. Over the past five years, scientific publication continues to rise gradually at the university. Figure 4.7 shows total number of university’s publications in two databases (web of Science and Scoups) for the period 2008-221.

Figure 4. 7: *University's publications in two databases*

. Note: graph retrieved from the document no: 12: Indicator of Scientific Research

4.4.2 Research Productivity in the College of Nursing

From the annual reports for academic years 2019-2020 and 2020-2021, it can be seen that the faculty members from the college contributed 10 research papers. These 10 papers are a part of 1345 paper were published at the university level in 2019 and 2020. Academic staff also have attended and participated at 22 scientific conferences (oral presentations and poster). A detail about research dissemination at nursing college is reported in Table:4.3

Annual reports before 2019 are not available for the college.

Table 4. 3: *Research Dissemination at Nursing College for the Period 2020-2021*

Type	2020	2021	Total
Research papers	5 • *web of science: n=1* • *Scoups: n=2* • *other databases: n=2*	5 • *web of science: n=0* • *Scoups: n=0* • *other databases: n=5*	10
Conferences	9	13	22

Note. Data retrieved from Annual Report in document number12.

One paper published by a nursing college was among the 900 university publications in the Web of Science database in 2020 and 2021. Similar to this, out of 732 university publications for the same time (2020–2021) in the Scoups database, just two papers were published by nursing colleges.

4.5 New vs. Established Universities: A Comparison of Resources and Staffing

The newly established university has flexibility in decision-making and implementation changes. However, it lacked the necessary infrastructure, facilities, and funds that a well-established university has built over decades. A well-established university has well-maintained buildings, labs, clinical simulation facilities, and funds compared to the young university.

In newly established institutions, staffing constraints are a common occurrence, as they may not yet have the reputation or resources to recruit highly qualified personnel in both faculty and administrative positions. Well-established universities possess a more experienced faculty, administrative support, and collaborations that assist in addressing staffing deficiencies.

4.6 Reflection on Access to the Site

In this site, the process of ethical application was supported by the research ethics director at the university, and the dean of the college, who provided unlimited support for this study, showed interest in the topic, which may reflect the desire to develop research capacity building at the college. The dean's support was clearly shown by the speedy response, and provision of the necessary documents I requested.

However, at the individual level, the recruitment process and data collection in this site were very slow and took a longer compared to Case Study 2. Obtaining the intended sample and

arranging the interview presented significant challenges. The majority of participants had to reschedule the interview many times due to additional work or urgent meetings that they needed to attend. I noticed unmanaged time among the majority of the academic staff at Case Study One, suggesting that this issue seems to be driven by management or leadership issues at the college level.

4.7 Summary

This chapter provided an overview and comprehensive description of Case Study One. This includes the history of the current nursing programme and demographic information about the university and the college of nursing, as well as an overview of research activities at the university and the college. Next chapter will present the main finding from case study one.

Chapter 5: Case 1 Finding

5.1. Introduction

This chapter presents the finding from analysis of the data collected in case study one. As described in the previous chapter, this case study is a nursing college in a public university in Saudi Arabia and it is classified as new established university.

The chapter explores factors that influence research capacity building (RCB) and shape research culture in a nursing college at a newly established university in Saudi Arabia (SA). As noted in the methodology chapter (Chapter 3), the findings were generated from an integrated analysis of three data sets: semi-structured interviews, document analysis and observational memos that resulted from researcher observation during data collection and analysis.

The identified themes and subthemes are linked to two broad areas: institutional support and resourcing and research culture, collaboration and communication. The chapter has been divided into two parts to reflect these two broad themes mentioned above.

5.1.1. Descriptions of the Selected Documents

Documentary analysis in this case study was completed for twenty-seven documents divided into five groups: organisational vision and mission (n=3), minutes of committee(n=5), policy documents (n=5), Annual report (n=2), and Publications in the University Journal “Journal of the North for Basic and Applied Sciences” (n=12). Table 5.1 provides a full description of the included documents.

Table 5. 1: *Included Documents Description*

Doc. Group	Doc. ID	Doc. Title	Assessment Type
Group1**:** Visions and Mission (n=3)	NBU-1	Vision and Mission- University.	Comprehensive
	NBU-2	Visions and Mission- College of Nursing.	Comprehensive
	NBU-3	Research and Innovation Strategic Plan (university).	Comprehensive
Group2: Research Committee Minutes (n=5)	NBU-4	First research committee minute. (17/11/ 2021)	Comprehensive
	NBU-5	Second research committee minute. (03/02/2022)	Comprehensive
	NBU-6	Third research committee minute. (23/03/2022)	Comprehensive
	NBU-7	Fourth research committee minute. (21/03/2022)	Comprehensive
	NBU-15	Postgraduate Programme meeting minute. (05/10/2020)	Comprehensive
Group 3: Policy Document (n=5)	NBU- 8	Promotion policy	Comprehensive
	NBU-9	Conference Attendance Regulations.	Comprehensive
	NBU-10	Regulation for excellence reward for faculty members.	Selective
	NBU-11	Criteria for accepting publication submitted for promotions.	Comprehensive
	NBU-14	University Regulations for Saudi Staff Members and the Like	Selective
Group 4: College Annual Reports (n=2)	NBU-12	Annual Report 2020	Selective
	NBU-13	Annual Report 2021	Selective
Group 5: University Journal (n=12)	NBU-16	Vol 1 Issue 1	Selective
	NBU-17	Vol 1 Issue 2	Selective
	NBU-18	Vol 2 Issue 1	Selective
	NBU-19	Vol 2 Issue 2	Selective
	NBU-20	Vol 3 Issue 1	Selective
	NBU-21	Vol 3 Issue 2	Selective
	NBU-22	Vol 4 Issue 1	Selective
	NBU-23	Vol 4 Issue 2	Selective
	NBU-24	Vol 5 Issue1	Selective
	NBU-25	Vol 5 Issue 2	Selective
	NBU-26	Vol 6 Issue 1	Selective
	NBU-27	Vol 6 Issue 2	Selective

The first group of documents related to the vision and mission of the organisation "University" and the College of Nursing. Three documents were selected and analysed to show the value of research at the College of Nursing and the University. These documents are the University's vision and mission, College of Nursing's vision and mission, and the University's research and innovation strategic plan. The assessment for these documents was comprehensive.

The second group of documents includes the meeting minutes that related to research at the college which include five documents: Postgraduate programmes meeting minute (n=1) and Research Committee minute in the College of Nursing (n=4). The assessment for these documents was comprehensive.

The postgraduate programme coordination meeting (n=1) was conducted to coordinate between the Dean of postgraduate studies and college of nursing regarding developing a postgraduate programme in nursing. The meeting was attended by a variety of members from both deanship of postgraduate study, and college of nursing which include dean of postgraduate study, dean of college of nursing, vice dean of the college, head departments in the college, and director of student admission and consultants in postgraduate study. The meeting aimed to develop a nursing postgraduate programme that is aligned with the university's strategic plan for research and innovation.

The research committee meetings (n=4) were held in-person at the College of Nursing. Some of these meetings were held during the data collection for this project, but I was not authorised to attend because of the ethical approval for this study which restricted any face-to-face contact due to the Covid-19 pandemic. However, I was given the reports for all research committee minutes. The committee consists of seven members from nursing college with different academic ranks: Assistant professors (n=5) and lecturers (n = 2). The research committee members meet once a month throughout the academic calendar year.

The third group of documents contains a variety of organisational policies (n=5), mainly those that relate to research, including funding policies for research projects and conferences, promotion policies, scientific research awarding criteria, and publication criteria. The assessment for some documents was comprehensive and other was selective.

The fourth group of documents includes the College of Nursing Annual Reports (n=2) for the academic years 2019-2020 and 2020-2021. The previous Annual reports (before 2019) were not available in the college website. I made a request to the college to get these reports, but they also were not available. Since the annual report contains a wide range of college activities during the academic year, the document assessment focused solely on data, statistics, and material linked to research activities and publications.

The last group of documents includes all publications in the University's journal: JNBAS 'Journal of the North for Basic and Applied Sciences'. The journal concentrates on research in Basic and Applied Sciences in Arabic and English languages. The journal has published the first Volume and issue in May 2016 and since that time, twelve issues were published. All 12 issues were included in the document analysis.

5.1.2. Descriptions of the Interview Participants

A total of 10 interviews were conducted, including three types of participants: Nursing Faculty members, Nursing academic leaders and a Stakeholder.

The interviews were carried out in two stages. In the first stage, semi-structured interviews were conducted with nursing faculty members from different academic ranks, followed by interviews with nursing academic leaders at the college. Based on the findings from the first stage of interviews, the second stage of interview was designed and conducted with the leaders at university's highest level. All of the interviews were audio recorded, lasted around 40-50 minutes, and were conducted remotely through Zoom video conferencing software.

The interview participants varied in relation to; seniority, speciality, nationality, academic rank, and positions. This variability in the sample gives a deep understanding about the RCB as noted in Methodology (Chapter 3). Table 5.2 provides a full description of the participants in this study.

5.1.3. Observational Memos

The data includes memos drawn from observations I made during data collection (documents and interviews) and during the analysis process. Memos helped providing a more thorough record of what was seen and experienced during the research process. Furthermore, the observational memos helped to provide an immediate reflection during data collection and analysis and reporting the finding. Therefore, I was able to instantly record thoughts, feelings,

comments, and interpretations that could otherwise be forgotten later. The data from memos were integrated with the data from the interviews and documentary analysis.

In this study, the observational memos enriched data by providing depth and insight that data in the interviews or documents alone may not capture. For example, through interviewing the academic staff, I noticed that participants, who had a chance to study abroad, were showed more confidant to conduct research and were more aware about the important role of research environment in RCB process. This observational memo added more insight about the advantages of scholarship program provided by the college to support staff studying overseas.

Furthermore, I employed the observational memos as an alternative role of field observation, which was restricted due to COVID-19 regulations. I acknowledged that the observational memos do not create a very comprehensive and nuanced record of the research as the physical visits do. However, the observational memo helped me understand deeply some physical aspects of research in the college. For instance, although I did not visit the sites physically, I have developed a main theme related to a lack of research infrastructure. This theme was developed based on my observations during interviews with participants who mentioned the research infrastructure. I then delved deeper into this issue by asking more questions and reviewing related documents of research structure and infrastructure. Through this iterative process, the observational memos played a key role in enhancing my understanding of the college's current research infrastructure.

Table 5. 2 *Participants' Demographic Data*

ID	Gender	Nationality	Leadership Position	Job Title	Qualification	Specialty	Dep.	College
P1	F	International		Assistance Prof.	MSN, PHD	Nursing community	Public Health	Nursing
P2	F	Saudi		Teaching assistance	MSN	Nursing Maternity	Maternity	Nursing
P3	F	International		Lecturer	MSN, PHD	Nursing leadership	Public Health	Nursing
P4	F	International		Lecturer	MSN	Nursing leadership	Public Health	Nursing
P5	F	Saudi		Lecturer	MSN	Community Nursing	Public Health	Nursing
P6	F	International		Assistance Prof	MSN, PHD	Medical Surgical	Medical Surgical	Nursing
P7	F	Saudi		Lecturer	MSN	Nursing leadership	Public Health	Nursing
P8	F	Saudi	Head of Research Committee	Assistance Prof.	MSN, PHD	Nursing leadership	Public Health	Nursing
P9	F	Saudi	College Leader	Assistance Prof	PhD		-	Nursing
P10	M	International	University president consultant	Full Professor	PhD	Pharmacy	-	-

Part one: institutional Support and Resourcing

The section of this chapter dedicated to findings related to support consists of five main themes and 13 sub-themes. The first part of the findings explains how various levels of support have a significant impact on research capacity. Support was mentioned frequently by all participants, both implicitly and explicitly, and was viewed as both a facilitator and barrier to RCB.

5.2. Main Theme 1: Time Management Challenges

5.2.1. Introduction

This theme explores challenges associated with time management and the lack of time to carry out research. Manging time was a major barrier to conducting research. A variety of factors, such as the high workload and other commitments, contributed to the difficulty in managing time and obtaining a balance between teaching and research. The theme addressed this problem and identified these factors that contributed to its development. The theme includes three sub-themes: heavy teaching load, administrative burden, and family responsibility. Each of these sub-themes will be explained below.

5.2.2. Sub-theme 1: Heavy Teaching Load

Participants reported that their teaching load has a major effect on their time for research. In addition to the nature of teaching in nursing programmes, involving theoretical and clinical classes, the teaching load has also increased due to staff shortages and an increase in student enrolment:

> …the workload, heavy load, did not give me any free space to do my research and I try to manage, but until now, to be honest, I could not. *P:8*

> …we have overload for teaching, I think the main problem for us the number of students…because of that no time to do any research. *P: 2*
>
> we have a shortage of staff resulted in overload for us…but if we had time, we could encourage our research. *P:2*

In the annual report 2020-2021, the college stated that number of students has been increased as result of opening applications for a new male program in the college. The number of students has increased from 175 in 2019 to 434 in 2022. However, the number of academic staff has slightly increased from 32 in 2019 to 36 in 2022. The annual report has not mentioned any plan to increase the number of academic staff in the college to reduce the workload resulting from the increase in the number of students. This is also linked to other issues related to the college strategic plan, which will be discussed later in this chapter. Although the plan to increase number of students was mentioned in the strategic plan, there is no plan to expand the number of staff in the strategic plan. The outcome of this plan resulted in the current staff shortage at the college. It was noted in the annual report that the emphasis was placed on expanding the number of students (to meet national and university priorities) while neglecting the expanding number of academic staff:

> What has been implemented are the aspirations of the college in the annual report for the previous year:
>
> 1- The budget to increase number of students in the college has been increased.
>
> 2- The male students' section has been established and 34 students have been admitted.
>
> *Document ID: NBU-13*

By reviewing the university regulations of working hours for faculty members, it was clearly stated that the academic staff are required to work 35 to 40 hours. The hours include teaching, researching, academic supervision, office hours, scientific committees, and other academic work. Due to the two aforementioned factors (staff shortage and increase in the number of

students), academic staff handle additional theoretical and clinical courses and exceed their maximum teaching hours to cover this increase in students. Consequently, the extra teaching load and clinical supervision gave little opportunity for research. The university regulations of working hours are reported below:

> Article 40: A) The maximum teaching load of staff members and the like is as follows:
>
> 1. Professor: 10 teaching units.
> 2.Associate Professor: 12 teaching units.
> 3. Assistant Professor: 14 teaching units.
> 4. Lecturer: 16 teaching units to be reduced during her/his study.
> 5. Teacher Assistant: 16 teaching units to be reduced during her/his study.
>
> B) The teaching unit, which continues for the whole semester, is the weekly theoretical lecture with a minimum duration of 50 minutes, or the weekly practical or field work with a minimum duration of 100 minutes.
>
> Article 41: Staff members and the like shall have (35) thirty-five hours working hours per week, raised to (40) forty hours by a University Council resolution. The hours include teaching, researching, academic supervision, office hours, scientific committees and other academic works assigned by the University concerned bodies.
>
> *Document ID: NBU-14*

5.2.2.1. Sub-theme Summary

National and University priorities to expand nursing student numbers have contributed to the current strategic plan at the college, which leads to an increased workload on academic staff and college leaders. This heavy workload leaves little time for research and limits academic staff's ability to manage their time effectively.

5.2.3. Sub-theme 2: Administrative Burden

Administrative Burden was identified by participants as a hindrance to effectively managing their time to carve out enough time for research. Both college leaders and academic staff have been impacted by the administrative burden. The administrative burden is said to be caused by the responsibilities related to the programme accreditation and internship duty:

> To be honest, I tried hardly to do this [managing time], but I could not. Like I'm a head of three Committees and a member of three others…I could not find any time, even like to stay with myself to work or continue in my own research. *P:8*

> Really, the main issue is a timing. we can't manage our time with our responsibility in college. This is because of shortage of the staff. If we had a good number of staff and good organised to our work there, I think we could find a lot of time to finish our research by excellent way, but now we are engaged in teaching, posting [clinical] and finishing our accreditation papers. A lot a lot of things. *P: 3*

The administrative burden also influences the general research committee performance which will be described in more detail later in the theme "Research Leadership". The participants highlighted two mains factors that contribute to the current administrative burdens: programme accreditation and internship duty.

5.2.3.1. Programme Accreditation

The college has applied for a national accreditation of medical programme from ETEC (Education and Training Evaluation Commission). The Ministry of Education (MOE) require all colleges and programmes to obtain the above programme accreditation. To fulfil the MOE priorities and get college accreditation, the academic staff have been assigned extra responsibilities and tasks. Staff members noted that they are distracted from research

activities as a result of spending more time on college accreditation which have a major impact on the faculties' time for research:

> Actually, we did not have time, especially now the college is signed for the accreditation, we are working for the accreditation for the school [college of nursing]. So that takes from us more time and more work. We did not find any time [for research] actually. *P:8*

Meeting MOE priorities may contribute the current extra administrative burden which leave a little time for college leader and academic staff to focus on research.

5.2.3.2. Internship Duty

One of the administrative burdens that challenges time management is the monitoring of internship students in the hospitals. Internship is a one-year mandatory training after graduation which is required for classification as registered nurse. Monitoring internship students was viewed as extracurricular, and that academic staff should not be involved in it as it is a responsibility of the hospital where the students choose to do their internship. Monitoring or "Supervising" internship students is a responsibility of CME department (Continued Medical Education) at hospitals. The CME deliver the required training and monitoring for internship students and provide the nursing college with monthly evaluations of student progress and attendance. What currently happens in the college, in addition to CME evaluation, is that the academic staff are also still responsible for the attendance and evaluation of internship students in hospitals. The final evaluation is calculated based on the average of the two evaluations (i.e., college' and CME' evaluations). Participants believed that the time spent on the internship programme should be saved for other activities, such as research.

> Supervising internship students in clinical settings makes staff spend more time in hospital. It is not like other nursing college cross the kingdom where internship students are supervised by nursing staff in hospital particularly CME department. From my own experience, as I was a member of internship committee at the college, the CME departments are also not fully happy with sharing supervising of internship students as they see the internship programme totally belongs to the hospital and the CME are accountable for intern students ex, scheduling, training, evaluation etc.
>
> *Observational Memo No. 9*

The internship mostly placed on teaching assistants and lecturers at the college which limit their time to prepare for scholarship requirements such as research proposal and admission applications.

> … I feel I can't do anything. Just going with the student [internships students]. Because of that, until now, I don't have time to do the proposal to complete my study [PhD degree]. Because of that no time really no time for doing anything *P: 2*

Although participants are aware of the issue of time management for research, they are unable to overcome these administrative barriers. They perceived this being a result of the additional work requested by college leaders which faculty members cannot refuse to do. Participants feel that in order to overcome this problem, support from college leaders is crucial. The support may include efforts to reduce the workload and administrative burden:

> Another thing is this added responsibility for this accreditation. Really, but anyway we cannot say no, we are a part of the university. So, just try to manage our time and thank God because we have so many holidays, right now, and I can do my work at home.... *P:4*

> so even when I try to like doing or manage my time, sometimes they suddenly asked us to do some tasks, like something urgent. These tasks avoid us to manage our time, you understand what I mean? *P: 5*

5.2.3.3. Summary of Sub-theme: We Cannot Say No!

Faculty members believe themselves to be an integral part of the university's development process, particularly given that the university is newly established and requires additional cooperation and effort to comply with Ministry of Education requirements and accomplish university objectives. This belief made them accept the additional administrative work that fell on their shoulders, regardless of its consequences for their research activity.

5.2.4. Sub-theme 3: Family Responsibility

Beside the workloads, and administrative burden, family obligations are viewed by participants as a factor affecting research productivity and have a direct impact on manging research time. Although participants are aware about this issue (i.e., manging time for research), they are often unable to overcome it:

> …I have more work in college and after that I have a lot of responsibilities at home, so I didn't find any single moment for my research time, so most of the time it's affect, really, I realised that. This is a weak point but sometimes I can try to be involved in [research] work and sometimes I can't. This is the truth. *P: 3*

Managing and finding time for research is a specific challenge for female academic staff, particularly those with childcare, who take on extra family responsibilities. Since the majority of faculty members are female, family responsibility may impact on the overall college's research activity.

> …it's like the first way impacting me or affect my research progress is the time. like, now I have my youngest child is six months and others child who in school already, so

> I have to get time to stay with them, especially now it's online education [during covid pandemic] so I have to be with them during their education, I have to support them. It is this affect my research. *P:8*

5.2.4.1. Summary of Subtheme- Female go extra mile to secure time for research.

In Saudi society, despite the fact that many women are employed, they continue to bear the burden of domestic/household affairs. This caused them to face difficulties in managing their family and professional responsibilities and put in extra effort to secure time for research activities.

5.2.5. Summary of the Theme

Time management is challenging for the majority of participants and perceived as a main barrier to producing research and research outputs. The difficulty with time management is linked to the heavy teaching load, administrative burden, an extracurricular duty, and family commitments which limit academic staffs' time for research activity. Staff shortages and an increase in the number of students compound this increase in workload and extra duty for both theoretical and clinical teaching. Lack of support from the college's leaders makes it difficult to overcome this issue.

5.3. Main Theme 2: Absence of Research Leadership

5.3.1. Introduction

Due to a lack of effective research leadership in the college, especially on the research committee, RCB was developed slowly. This slow development was related to three main reasons: the absence of a strategic plan for research in the college, a lack of qualified research leaders, and finally the absence of a mentoring system. These three factors are explored in the following three subthemes.

5.3.2. Sub-theme 1: Strategic Plan for Research

5.3.2.1. University Strategic Plan

The findings describe how research is the top priority for university leaders who concentrate on research in order to improve the university's ranking locally and globally. The university created a strategic plan for research and innovation (2020–2024) with the objective of enhancing the institution's capacity for research:

> Actually, at the university, we have a strategic plan 2020-2024. One of the themes is the research work. And from this theme, we have many initiatives and one of them is to increase the chance of scientific research and organising the research day at the colleges level. *P10*

The university leaders set a range of research priorities to support research which include research capacity development in different fields including a focus on Medical and Allied Health Sciences research.

> 3. The university Research Priorities are listed as: [at the University]
>
> Priority 1: Research Capacity and System Development
>
> Priority 2: Establishing Mining Research Centre and Conducting Mining Research
>
> Priority 3: Student Core Competencies and High Impact Educational Practices (HIPs)
>
> Priority 4: Medical and Allied Health Sciences
>
> Priority 5: Environment and Sustainable Development
>
> Priority 6: Renewable Energies.
>
> *Document ID: NBU-3*

To accomplish the above priorities, the university offers five initiatives (programmes): the Research Capacity Building Programme, the establishment of a Research Service Support Office, the Partnership Programme, the Students Research Support Programme, and the Research Groups Programme. The strategic plan, however, does not explicitly specify how these programmes and initiatives will be carried out. The details of how the proposed programmes will be implemented are not completely disclosed. It is challenging to assess the potential impact of the proposed programmes because the document lacks an action plan and was developed a year before the data collection started for this study.

One of the university strategic plan objectives is to support scientific research in the fields of environment and selected health issues of importance to the local community and region. The strategic plan identifies six areas where the college of medical and health science should align its postgraduate study and research within the identified area. The six areas involve:

> Common Chronic Diseases in the Northern Border Region, Epidemiological Studies, eHealth Development Studies, Environmental Health Studies, Drug Development and Safety Studies, Collaboration in the Saudi Genome Project.

Document ID: NBU-3

When I reviewed the Research Strategic Plan (in document ID: NBU-3), I observed that none of the committee members, who participated in developing the university strategic plan for research, have a background in nursing. The committee formulation members have different backgrounds, including, Engineering, Education, Medical laboratory, Microbiology, Business Administration. Although two of the members are from health field, more support for nursing research in the university level is still needed:

> A part of stakeholder's recruitment for this study, two of the Strategic Plan Formulation Committee Members (both their background in health science) are

> invited, but neither agreed to take part in the study. One of them stated that: no benefit from doing interview with me as I am not in nursing field. The other member stated that: Sorry, I cannot help you, I am not in nursing college and also, I am no longer a member of that committee. This recruitment experience (with the two committee members) reflects how important is to involve academic nurses, in such research committees, to support nursing research in the university's strategic plan.
>
> *Observational Memo No. 1*

5.3.2.2. College Strategic Plan for Research

Despite the fact that research has been mentioned in the mission of the college since 2007, the college did not start developing a research strategic plan until 2021. The delay in developing the strategic plan has an influence on research and researchers in the college due to absence of a clear process for supporting research activity in the college:

> Before having a committee for research, the head departments do not encourage us to make papers, or to make research. However, now they are concerned. *P.3*

The college established a research committee in 2017 which is responsible for monitoring and leading research activity in the college, but faculty members reported that the performance of research committee was below expectations of faculty members:

> … but the reality, really, I do not know anything about the research committee! *P:1*

> I have some part, a little part of this research role in committee, I am in the research committee just to discuss what we have to do in the future with the research. *P:2*

The research committee has not had the anticipated impact on the college's research and researchers, for example by providing support in applying for funding and writing for publication. The staff did not notice any support or change after the establishing of the research committee. They feel that committee members have failed to deliver the required information for all faculty in the college:

> I am not in the research committee. Because this, I tell you, only the person in committee research knows how to get the fund, how to get ethical approval in the university, how, how how ! *P:1*

Despite the Research Committee providing initiatives, goals and objectives for research activity, in reality, this was more theoretical [on paper only] than practical. These initiatives were not carried out in the college's actual practises:

> I received their meeting reports, which includes their initiatives to develop research, but unfortunately nothing happened in the real practice. *P:9*

Members of the research committee were hindered from concentrating on enhancing the college's research capacity due to their administrative burden and involvement in multiple committees as mentioned earlier in the time management theme. The general research committee performance was affected by the administrative burden:

> Beside the research committee, I am also the head of the advising committee and head of the internship committee which actually take all my time. *P:8*

> … we have some research committee members, maybe five to six, who are involving in different committees, and they are handling all the work which make it overload for them and make them not concentrating in just one work. And, as a result, the work is not finished or is not accomplished. *P:8*

> ..as I said, the research committee, we did not have a lot of time to call also for the meeting because we are working also for the accreditation for the nursing. *P:8*

> .. When we call for a meeting, they came for the meeting, but for the research committee meeting, they always say okay I'm busy here I'm busy here, and busy there, I could not figure out, we just meet two times. *P:8*

Recently (at the end of 2021) there is much improvement in the organising and leading of research in the college. I observed this through during data collection which lasted for three months. The Interviews and document analysis (for research committee minutes) showed that the head of the research committee started to develop the first strategic plan for research. The meeting minutes reveal how the committee started building a research capacity plan which is now to be driven by "college strategic plan for research" unlike before, where there is no strategic plan for research. Also, through reviewing all meeting minute reports of the research committee (four reports), I observed that the research committee act in more systematic way than before. This could be linked to the effect of assigning a new head for the research committee who has distributed the responsibilities among its members to allow them to focus on specific goals and identified responsibilities:

> … divide the rules, everyone [in the committee] have their rules, I want some staff who are responsible for the student research, others staff for the faculty research,

> some of them responsible for the funding, some of them are responsible for the journals like to find the really good journal. Also, we discussed to have one day each two weeks or maybe each month called a journal club day, we came and present what we have, but you know, there is wasn't much support in this point because the workload and all this responsibility that we have it, and so we did not really did the journal day actually. *P:8*

These distributed responsibilities demonstrate a different kind of research support including, staff development, student support, publication, and research funding support.

> Division of Job Responsibilities of the Committee Members:
>
> • Students Support: Dr. F.J & Dr. L will be responsible to support the students for their research activities.
>
> • Training & Development: Dr. H & Dr. B will be responsible to organise Training & Development of the staffs & students.
>
> • Publication: Dr. A will be responsible to help the faculty members & students to publish their research articles in the approved journals of the Northern Border University.
>
> • University Grant & funding: Dr. F.A will be responsible to enquire about the research funding of the University & also she can help the staff to how they can access the funding for their research project.
>
> *Document ID. NBU-4* .

Participants started to feel more supported and motivated after assigning this new head of the committee:

> …when Dr. X came in, this year, and then finally was the head of the research department [committee], then there were many motivations. *P:4*

The new strategic plan is being developed (not finalized yet) based on a "Need analysis technique" and most of the staff participated in this analysis to find out the current limitations and their need to improve research activity in the college:

> 1. Strategic Planning of Research Activities:
>
> Dr. X. Head of Research Committee explained about the Strategic Planning of Research activities to the staff. First, we have done Strength, Weakness, Opportunity, and Threat (SWOT) Analysis. Al Faculty Members were actively participated in the SWOT Analysis; we realized our strength & weakness of Research activities. Many faculty members were doing research, but few of them have research publications in the Web of Science or Indexed Journals. Faculty members were requested to organise conferences of Research Publications. They need to know how to publish scientific research on Web of Science Journals. As per Saudi Vision 2030, Our University is insisting us to develop Research Units & to do Individual/ Group or Departmental Research in our College. So, Dr. F has given 2 weeks' time to formulate Research groups & for preparation of Research Proposal.
>
> *Document ID. NBU-5*

Although the nursing college has addressed a research group and identified clear research areas in the developed college strategic plan, this was not based on the research priorities in the university strategic plan. Indeed, staff have been asked to develop research area based on their interest only regardless the university research proprieties. This could lead to conflict between the university and the college aims and objectives.

3. Identify the Research priority areas of each department [in the nursing college]: D.r X., Head of Research Committee, informed that all departments have to identify the Research priority areas, and work on it to make good research.

Document ID. NBU-6

Create a Research Team:

- Dr. X. requested to the faculty members to formulate research team to do research. At least two members will be in the team. Faculty members can make departmental research or faculty can make collaboration with other departments or other institutions.
- Faculty members will be formulating the research team. Within 2 weeks' time give the name list of faculty members in research team and give the topics for their research.

Document ID. NBU-5

So far (i.e., at the time of documents analysis), the potential strategic plan contains different elements such as developing collaborative research and research team. These elements could enhance research in the future, but the evaluation of its outcome (ie, the new strategic plan) is currently very challenging until the strategic plan is totally developed and put into practice.

5.3.2.3. Summary of the sub-theme: Conflict in achieving priorities

The university has introduced a strategic plan and research priorities, which should have facilitated the alignment of the strategic plan of the college with the university research priorities. The leadership at the college did not seek to include the university's research priorities in the college's initial strategic plan, which resulted in conflicts in working to achieve the various priorities.

5.3.3. Sub-theme 2: Lack of Qualified Research Leaders

The lack of research leaders and qualified academic staff was frequently mentioned by many senior and junior staff and was said to have an impact on their capacity to conduct research in the college. Existing qualified leaders in the research committee and the college will support the academic staff, in participating in research, by providing support such as guidelines and strategies for research activities in the college. Participants believed that effective research leaders should have extensive experience with the research process (applying for fund, promotion, etc,) and publication:

> …another thing I can said, the committee for research. it should have involved high qualified person and the high experience person in publishing and the research process, this will help us more and make us motivation[ed] to be one of them, and to be one of researcher here in our university. I think this is important point to assign very qualified and experienced in this position. *P: 3*

> …There is lack of expert and honest staff who do their best to improve nursing research in the college. *P:9*

Document analysis findings disclosed that the college may be lacking sufficient numbers of academic staff in upper levels of seniority (i.e., Full professor or Associate professor). All current academic staff are a mix of assistant professors (PhD), lecturers (master's degrees), and Teaching Assistant (bachelor's degrees) as described in table No.5.3. Lack of research leaders is also associated to recruitment criteria (i.e., selection criteria for assigning new staff), which lack a focus on assigning more senior staff who can efficiently direct the research activities in the college.

Table 5. 3 *Academic staff and their Ranks*

Rank	Number of staff
Full professor	0
Associate professor	0
Assistance professor	14
Lecturer	13
Teaching Assistant	7

Note. Data in the table is retrieved from Document NBU- 13. Annual report (2020,2021) and college website.

5.3.3.1. Summary of the sub-theme- demotivated to do research.

Academic staff feel unmotivated because of the absence of research leaders and expert researchers who guide academic staff in the research process. A lack of research leaders and expert researchers at the college level could discourage staff from conducting research and being involved in research projects.

5.3.4. Sub-theme 3: Absence of Mentoring System

Through reviewing documents related to the new strategic plan for research, the mentoring system was not mentioned or planned to be developed in the college. Even though the developing mentorship system may be seen as an excellent step towards increasing research capacity, mentoring cannot be supported and be successful without the presence of senior researchers who can guide and lead the researchers in the college. This is also related to what was discussed in the prior subtheme about the lack of research leaders and qualified staff, on research and researchers.

The mentoring system was completely invisible in the college, and this had a significant impact on the development of researchers, particularly those in the early stages of their careers. Although they were not using the term “mentoring”, they used a similar word that referred to mentoring concept, such as a need for someone to be with me. Many participants expressed a desire to undertake research, but the question was how and when to start a

research project? These questions included the whole research process from designing a research project through to dissemination.

> … Now the first step is to starting, when and how to start and what to start of.. *P: 1*

> How can I start with the doing like research with other staff to take, to see their experience in this field, because they are in this university more than 15 years. *P:2*

> I need to talk with someone who know more than me but, no time for them, they have many things to do it. *P: 2*

Most of the participants reported that the absence of expert researcher, who is providing guidance, support, and advice to junior faculties in research process and dissemination, makes them struggle to develop the skills and knowledge needed to be successful in their chosen field, leading to slower progress in their research:

> ..I am not good in searching about where I can publish. Because of this, sometimes I need somebody with me *P: 1*
>
> … I tried many times and put some questionnaire and try to collect the data, but it is very slowly. Not expected to me. I am expect~~ed~~ [ing] more effort, quicker… but with research, I started already two subjects of research, but I feel it is very slowly and very... I don't know what can I do for me? [laughing]. *P: 1*
>
> in the summer vacation, we have some time, free time but we prefer to have someone to talk with us, to encourage us. If the college did this one [mentoring] for us, could make us know more about the research and encourage our skills. *P:2*

5.3.4.1. Summary of the sub-them- How and when to start a research project?

Academic staff have a strong desire to engage in research, but they often lack guidance from a mentor who can help them stay on track and produce excellent outcomes. A qualified mentor can help answer a common question: when and how to conduct research projects.

5.3.5. Summary of the Theme

The conflicts in the college strategic plan and university research priorities highlight the consequences of lacking research leadership at the college level. The absence of research leadership could be linked to a lack of expert researchers and nursing leaders, which demotivates individuals from conducting research and hinders the college from developing a successful mentoring scheme.

5.4. Main Theme 3: Research Infrastructure

5.4.1. Introduction

Data analysis identified many aspects that are related to absence of research infrastructure in the college which affect academic staff`s ability to conduct research. This includes the Research centre/office, and physical infrastructure such as Researcher room/zone, and Lab facilities. These two aspects will be discussed in the next two sub-themes.

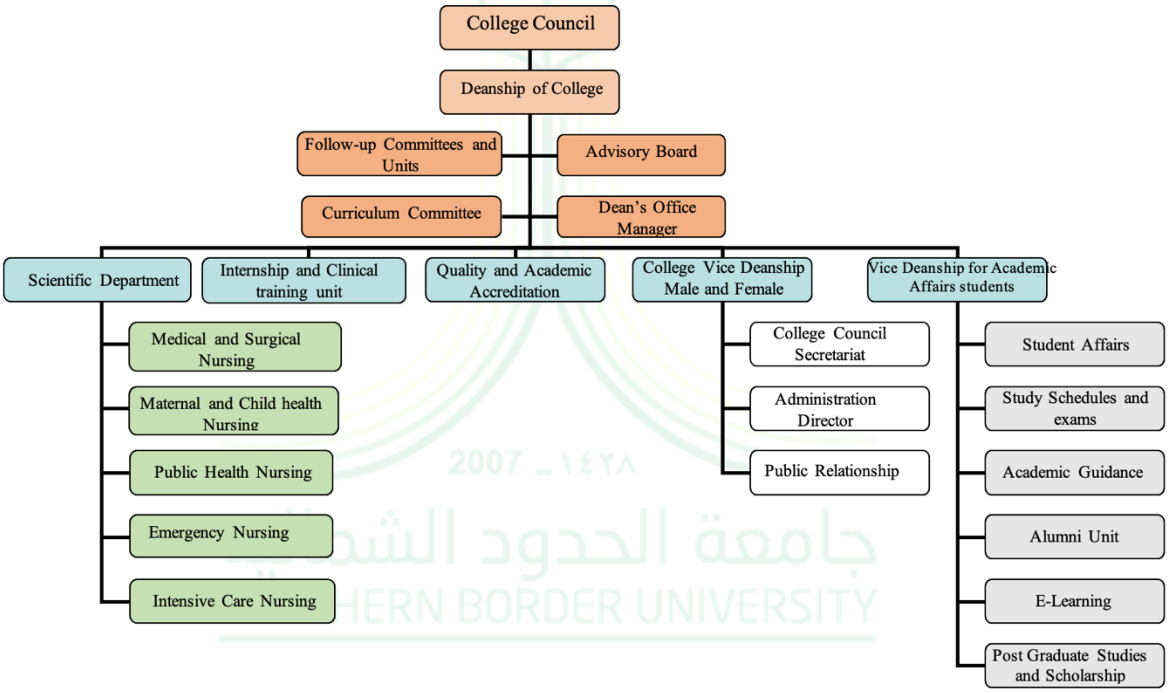
5.4.2. Sub-theme 1: Research Unit/Centre

In this case study, the college organisational structure does not involve a research unit. This can be seen as an indicator of the low priority of research support at the college level compared to other academic areas:

> ..it is a new college; we do not have infrastructure. We have to establish the college before start developing research. *P:9*

Research was not given the same priority as other organisational elements such as internships, or the academic accreditation as shown in Figure 5.1.

Figure 5. 1*: Organisational Structure- College of Nursing*



I reviewed the college activities in the Annual Report Document for Academic Year 2020-2021. From a total of twenty Scientific activities and community services implemented in the college for academic year 2020-2021, only one activity related to research support, which focused on research practice for undergraduates. This activity was undertaken in collaboration with the High Impact Practices Unit at university level as explained in Table 5.4

Table 5. 4 *Research Support Activities*

No	***Activity***	***Date***	***Speakers***	***Target group***
1	*"Undergraduate research practices" Part of the College of Nursing's collaboration with the High Impact Practices Unit.*	*03/2021*	*Prof. Albajory Dr. Alzahrani. Dr. Alruwaili Dr. Almutairi*	*Academic staff in nursing college*

Note. Data retrieved from Document no. NBU-13. Annual report 2021

This relative lack of research support activities at the college might be attributed to the absence of a research unit in comparison to other activities in the college such as internship unit. This was evidenced when I reviewed all 20 activities, I observed that each of the activity was done by a related unit. For example, the internship unit has implemented eleven activities, and the accreditation unit has implemented six activities. Table 5.5 report the college activities distributed based on related units. Thus, absence of research unit could be a reason for the low number of activities to support research in the college.

Table 5. 5 *Distribution Activities based on Unit in Academic 2020-2021*

Unit	Number of Activities (2020-2021)
Internship Unit	11
Quality and Academic accreditation Unit	6
High Impact Practices Unit (at university level).	1
University Rectorate unit	2

Note: data is generated from Document no. NBU-13. Annual report.

5.4.3. Sub-theme 2: Physical Environment

Participants emphasizes that the university library provides a range of services to support research activity. Participants noted that the Saudi Digital Library (SDL) is one of the most helpful and useful services that facilitates undertaking research in the university. SDL is "*a national online digital library resource in Saudi Arabia*". SDL entails more than 169 databases, and +50,000 journals in different fields including medical and health sciences. The university provides free access into SDL for all faculty members and students to support them in the research process.

Regarding the library facilities, participants shed light on many issues related to the library and it services. Such issues include, Library location, opening hours, and limited access to a helpful librarian.

The nursing college's location is on a separate campus than the library, which limits access to the library's resources (like physical books, researcher rooms, etc,). Staff members consider the location creates obstacles for them to access the library. In addition to its location, the opening time is limited to work hours (8:00 am to 4:00 pm). This limited opening time prevents faculty members from accessing the library after completing their primary duties in instruction and clinical:

> I prefer to go for library, but it's usually closed also. This is the big problem for us and even it's small, it's closed. This is the main problem for us…. it's not in the same campus. P:2

Lack of support from the librarian was mentioned by some participants as no guideline for library services, finding booking, helping in search.

> …there is no staff. No librarian there to help you. Even if there is one, she/he said for you, just go on take what you want and come to me and just sign. What is that!!! They have to tell us what books are there. P:2

The participants feel that they are not fully supported in the context of IT services, especially the software for analysis (both Quantitative and qualitative data) and citation mangers.

> …Also About the resources, for example, the software, I need to pay for the programme and to do analysis, I'm talking about during the year I want to conduct research, but now I didn't know, they say there's a lot of development in the College and the University overall. *P: 5*

The college has not had a specific place or room for researchers. There is a small library in the nursing college building which could be a useful place for staff to spend their time for research.

However, participants did not seem satisfied with the college library facilities and faculty members in the college preferred to go to the main library to work on their research. The absence of a suitable researcher's room in the college could be considered as a barrier that affect research productivities as academic staff have to drive 15 to 20 minutes to the main university library which is on a different campus.

> I told you and also you didn't see the library in our college!! It's really old, really nothing is there, we need to improve it. *P:2*

> Based on the data from interviews and documents, I observed that the college does not have any suitable area or place for researchers. There is a small library in the building, but it was not available all the time (only available between 8am to 4pm) and it is not fully equipped with basic resources and tools like enough desktop computers.
>
> *Observational Memo No.4.*

In addition, the lack of lab equipment seen as barrier to conduct research. Participants reported that they are unable to conduct certain experiments due to the lack of access to the required tools. They feel that they are not supported to conduct their experimental research:

> No tools and equipment in our labs. How do they expect us to do experimental study [Lab work and experiments] while there is no tools and equipment in our lab?! *P:9*

5.4.4. Summary of the Theme

As a new-established university, building infrastructure to support the needs of the colleges, staff, and students is one of the primary university goals. In general, the university is still developing its infrastructure in many areas, including programme development, curriculum, the university hospital and research infrastructure, which is given less attention than other areas.

5.5. Main Theme 4: Research Capability (Skills and Training)

5.5.1. Sub-theme 1: Confidence to Conduct Research

Although the majority of participants believed they possessed the basic research skills, they were not entirely satisfied with their level of expertise and skills. Most are seeking to improve their research abilities, particularly in terms of research methodologies like mixed methods, and data analysis using software. Additionally, some participants who received their degrees a long time ago, connected the need for research training to their desire to update and refresh their knowledge:

> …But I think I have skills and not bad, but not excellent. So, I am not accepting my skill, I need more. *P:1*

> .. Until now, since I did not forget all my information and so now, I see my level is good but I'm not sure like if I stop working on research, these skills may be forgetting. *P:8*

The department's greater emphasis on teaching is reported as one cause of the lack of confidence in conducting research among junior academic staff. The department prioritises teaching and clinical over research, so they only have limited ability to conduct research:

> … my head of department, before I went for UK [to study master's degree], she was just focusing on the teaching and how can dealing with the student. That is it. But nowadays, they changed the head of the department and usually encourage us to do research. *P:2*

Junior faculty members reported little confidence in their research skills in methodology, data collection, data analysis, etc. Although the university provides research courses, they were not beneficial to all staff because its focused-on research policy rather than training on research methodology or specific research skills.

> without doubt for this one, because for me, really, I have problem with methodology. I'm not ashamed to do like this with myself, I tell you the truth. *P:2*

> … nowadays, they start to do some courses in my university, online courses, but I mean the live courses is better for us to just understand what this problem is, how can we deal with this, how can we create our like research question, and how can encourage our methodology and then how can we analyse our data after we collect the data yeah. *P:2*

Although lack of confidence occurs among staff at an individual level, it is also closely related to a higher level (departmental and organisational); that is to say, a lack of confidence is linked to a lack of a research training, and this is considered further in the subtheme below.

5.5.2. Sub-theme 2: Lack of Research Training

Lack of research training was frequently mentioned by both senior and junior faculty members. Despite the fact that the university provided staff with research training, it appears that the nature of this training is not what the staff are actually seeking. A guideline and information about research publication are provided by the university, but this is not perceived as real research training. The staff reported needing research training like workshops, seminars, and online courses that cover topics such as study design, data collection and analysis, and publication ethics:

> Actually, when you say research training, we do not have. Really. it's only meetings and then they will just send us links for how to get the data privacy, how to publish, how to... but exactly like webinar from the college or any seminar from the university, I cannot remember. only the thing that I am thinking of just we had a meeting only then, you group yourselves and then we did one week to submit something like that, but it's not really a training for research. But I wish we had one. *P:4*

> I can't remember but during the year, there was no any courses or classes, they give it to us to teach us how to do the research. *P:5*

When I raised research training during my interview with the academic leader, she asserted that since all of our staff members hold master's degrees or higher, they are all expected to be acquainted with the fundamentals of conducting research. The leader ends by emphasising that *"...research training is not required" P:9*

The document analysis disclosed that the research committee at the college recently started emphasising the importance of research training and development. Through reviewing all research committee meetings, it was clear that research training and development were assigned to two members of research committee who were responsible for research related activities. The committee meeting minutes briefly mention research training and development but without determining a specific action or focused strategies on how these will be implemented or achieved.

> Training & Development: Dr.H & Dr. B will be responsible to organise Training & Development of the staffs & students.
>
> *Document ID. NBU-4*

5.5.3. Summary of the Theme

Advanced research training is necessary for all academic staff. Participants who had master's degrees often expressed a need for training. The academic staff who had an opportunity in the scholarship scheme demonstrated increased confidence in doing research, highlighting the benefits of the scheme. Further information on this scholarship scheme will be provided in the next section (the financial support).

5.6. Main Theme 5 : Financial Support

5.6.1. Introduction

The theme discusses financial support and funding opportunities for research and highlights related disincentives that hinder research activities. The theme has three subthemes: scholarship scheme, fund for research projects, and fund for conference attendance.

5.6.2. Sub-theme 1: Scholarship Scheme

The university provides a full scholarship for all Saudi faculties at the university, including nursing faculties, to purse master's and PhD level study. The college of nursing has more than thirteen faculty members who are currently studying higher degree in nursing in different specialties and in different countries such the UK, the USA and Australia. Table 5.6 shows those faculties members with their gender, and the degree they are studying.

Table 5. 6 *Academic Staff Studying a Broad*

Gender	Studying PhD degree	Have approval to study PhD	Studying Master	Have approval to study Master	English language	Total
M	2	-	-	-	1	3
F	2	3	2	1	2	10
Total	4	3	2	1	3	13

The table 5.7 shows the number of faculty who are studying (or get approval to study) abroad based on the department in the college.

Table 5. 7 *Academic Staff Studying Abroad Based on their Department.*

Department	Public health	Critical care	Emergency	Maternity	Medical/surgical	Total
Number of staff	5	3	1	2	2	13

The participants value the scholarship programme and studying overseas as it was seen as a great opportunity to develop their research knowledge and skills. The participants also clearly noticed a huge improvement in their ability to conduct research before and after studying abroad:

> …actually, I'm just graduated from UK, because of that. before I go for UK, I don't have any idea how can I do the research to be honest with you. But after I finished my master, I start to thinking to do at least one research each year to just motivate myself and my other colleagues. *P:2*

> When I do my master's degree, because my study is focusing on research, I do some research, for example, how can I do the proposal, how can I start with doing something, yes, this improve me and really it makes me like I feel happy with myself to do something like this. *P:2*

> So when I went to United States, I have no idea about [research], even if I took some research in my undergraduate, but it's just like very basic information, I could not even remember them. When I go to the United States, I have in my master degree also good a solid basic about the research because I was taking courses about. In PhD, I

> have like maybe four courses all it's about research and also there is elective courses all about research that's what give me the whole idea about like all the methodology of the research or like type of research and how to publish. All these information it's give me like in the PhD. Before that I have no idea actually about anything about the research. *P:8*

5.6.3. Sub-theme 2: Fund for Research Project

The university provides a fund to support research projects. Document analysis identifies financial support for researchers to conduct research projects and this support is available for all staff. The amount of funding is assessed by committee members who are authorized to approve the fund:

> we are claim for research group [in nursing college]. They [faculty members] are allowed to send their proposals to the university committee for research work. Once it is accepted, university will supply them with a fund, just to cover all research expenses and also little prize for student who involved in this research. *P:10*

However, most of the participants have never applied for funding before due to a lack of information regarding the process and requirements for applying:

> I have had bad experiences in the fund [laughing]. I don't know why?! I don't know how to distribute the fund.... many papers are needed for fund, it is a big issue... this issue should be focused from university to tell everybody. *P:1*

> This is actually my major challenge when I came here [in the college], I tried the first research and I said Okay, does the university have a fund for this, I could not find the right way to ask, but I asked some colleagues, they told me, you publish, you pay for yourself, after that you ask for what's called a "rewarding", they give you like a

> reward if you publish in a very high-level journal like a q1 or q2 and then you can submit for this reward. *P:8*

The delay in providing the approved fund for research was highlighted in the interview. The delay in funding is perceived as a disincentive to apply for funding and for conducting a research project. Some faculty members have applied for funding which was approved but they received the fund very late. It is taking a long time and usually, in most cases, the funding is paid back after completing and publishing the projects. (i.e., the faculty will pay, then university will pay back the amounts):

> I applied for funding in 2019, and it was approved, and I was paid back just a few months ago [in 2022]. *P:9*

There is paradox of a university research strategy, with an operational plan that acts as a disincentive and demotivator to conduct research.

5.6.4. Sub-theme 3: Financial Support for Conference Attendance

Policy document analysis also identifies the provision of financial support for conference attending's expenses such as registration fees and travel expenses. However, this is exclusively for Saudi faculty members with the rank of Full professor, Associate professor, and Assistance Professor.

> **Article A-1:** Participation in conferences is limited to faculty members with rank: Full Professor, Associate Professor, Assistant Professor.
>
> *Document ID. NBU- 9. Section 4*

> **Article 68:** The University may grant flight tickets and transfer allowance to staff members participating in a conference or symposium or can only allocate tickets or attendance permission without any financial commitment.
>
> *Document ID. NBU- 9*

The Saudi faculty members who are holding a master's degree, and all international faculty who hold Masters or PhD's, are excluded and only provided with an excuse to attend conference without covering any expenses like fees and travel:

> **Article 4/2:** The president of the University, based on the recommendation of the Department Council and the College Council, to approve a faculty member attending a conference without any financial commitment.
>
> *Document ID. NBU- 9. Section3*

> **Article W-3:** If the university does not bear the expenses of attending the conference, the faculty member is given paid leave for a maximum of five days.
>
> *Document ID. NBU- 9. Section 4: .*

As a result of this policy, Saudi Lecturers (master's degree), and the international staff, could not be motivated to attend and participate in international conferences. Surprisingly, the college still request all academic staff to attend scientific conference to enhance research in the college:

> Research Conference: Faculty members were requested to have research conference on Research Publications.
>
> *Document ID: NBU-5*

This requiring attendance without providing sufficient support leads staff to focus their attendance and participation merely on the free conferences and as a result, the quality of attended conferences can be low. This was noted in the interview with the academic leaders:

> … even the conference, they attend, has a low ranking and is not well known. *P:9*

Despite the university effort to develop research and innovation, participants perceived that university support is still below the expectation. In practice, the college tried to develop some initiatives to embed research culture among staff and students in the college but there was a lack of financial support to do such activities:

> I have met the one of the university leaders and I discusses with him the college's need for support to do some research activities and provide a prize for the best poster and research paper, at that moment, he welcomed the idea but later on, I never hear back from him. *P: 9*
>
> ..I was disappointed because no response from the top leaders [university leader]. But I do not blame them because they are dealing with more important stuff. *P:9*

5.6.5. Summary of the Theme

A high quality of research output, including conferences, cannot be met without giving equal support to all staff members. The inconsistency between the intended outcome and the current policy was observed. This policy has a great impact on Saudi lecturers and international staff conducting high-quality research.

Next part of the findings focused on research Culture and Collaboration, and communication.

Part 2: Research Culture and Collaboration, and Communication

The second part of this chapter, dedicated to findings related to research culture and collaboration, consists of four main themes and seven sub-themes. This part of the chapter addresses how the present research culture became embedded and how collaboration and communication at many levels impacted RCB.

5.7. Main Theme 6: Research Culture at the College

The theme explores the current research culture and related factors that affect the research culture at the college. The theme includes two sub-themes: complexity in promotion criteria, and individualised research activities.

5.7.1. Sub-theme 1: Complexity in Promotion Criteria

In the promotion policy, the academic staff must obtain four units to fulfil the requirement for promotion to Associate Professor and six units to Full Professor. To receive one unit, the research paper must have one author which is defined in the policy as "single work" or solo research. If there are two authors, each will receive a half point, which means two research papers are needed to receive one unit. If more than two, the first author will get half unit and the rest will get quarter of unit:

> **Article 32:** The minimum scientific production required to apply for promotion to the rank of Associate Professor is four units published or accepted for publication, at least two of which are single works [one author]. Recommendation of the Scientific Council may exempt from this condition for some disciplines, provided that the publication is not less than one unit.

> **Article 33:** The minimum scientific production required to apply for promotion to the rank of Professor is six units published or accepted for publication, at least three units

> of which are single work. Recommendation of the Scientific Council may exempt from this condition for some disciplines, provided that the publication is not less than three unit.
>
> Single work, stipulated in Articles 32-33 of the Regulations Governing the Affairs of the University Employees, may be replaced by two published works or accepted for publication in ISI (web of Science), provided that the applicant for promotion is the First Author.
>
> **Article 34:** Scientific work is counted as one unit if the author is alone in its authorship and with the half unit, if co-authored by two. If it is joint research between more than two, it is calculated by half a unit for the principal researcher and for each of the rest by a quarter of a unit. If it is second joint research between more than two people, each of them is counted a quarter of a unit.
>
> *Document ID. NBU-8*

As a result of the above criteria, some academic staff members prefer to work individually to get a full unit for each published paper and to avoid conflicting on who will be the first author, second author etc. So, instead of publishing eight papers (if there are two authors), researchers prefer to publish just four papers by him/herself to satisfy the promotion criteria for Associate Professor.

5.7.2. Sub-theme 2: Individualised Research Activities

Some participants prefer to work on their research individually. “Jealously” was very common among staff which often leads them not to share their research with others. They prefer working independently “in a secret way”. As a result of such individualised working,

academic staff can feel unmotivated to do research and not encouraged to collaborate in research:

> many researchers, and many research, but without telling anybody, I think it better for community of nursing college to discuss the publication inside the college. It is a better and motivate. But in here [at the college] No! I think it is the individualised activity. *P: 1*
>
> I am so sorry, not collaborate between staff, every staff makes research under the table. If I ask for example, Dr. X are working on research, I need sharing [collaborate] with him/her, to learn from him/her, but Dr.X is not taking anything! [faculty refused to collaborate] I am not able to make anything! *P:1*

Although this behaviour—individualised working—occurs among researchers at an individual level, it is also directly related to a higher level within the organisation. It is linked to some national and organisational policies, particularly the promotion policy and its related regulation such as solo research, which plays a major role in developing this behaviour among staff in the college.

> what is the promotion for the first and second and third author? Until now I have no idea about all these. That what makes me actually afraid, not doing research with anyone, just doing research by myself. *P:8*

The university and college vision and mission statement involve research and the important of developing supportive environment for scientific research to meet the university and college priorities:

University' Vision:	We aspire to become a distinguished and credible university, recognized for our academic programmes based on building competency, research, innovation, and providing services across the region and the Kingdom.

University' Goals	2- Stimulating research and innovation following the university's research priorities.

Document ID. NBU-1

University Research Innovation Vision:	To be distinctive university in research that focus on regional priorities and attending national challenges.
University Research Innovation Mission	Provide a supportive environment for scientific research and innovation in a way that contributes to achieving the university's research priorities.

Document ID. NBU-3

College Vision	We aspire to excellence in nursing profession through academic programmes, educational practices, research and community partnerships.
College Mission	The College is committed to distinctive nursing education and research through the development of nursing programmes, research environment and community partnerships
College Goals	4- Provide a supportive environment for scientific research.

Document ID. NBU-2:

Research committee's Vision	We aspire to excellence in nursing profession through academic programmes, educational practices, research, and community partnerships.
Research committee's Goal	The College of Nursing research committee envisions creating a culture of scientific research community with of highly qualified scholarship faculty who inspire in development and improve healthcare.

- All committee members were agreed to formulate Research team in the college with the collaboration of all other departments of our institution.
- As per Saudi Vision 2030, Our University is insisting us to develop Research Units & to do individual/ group or departmental Research in our College. So, Dr. F. has given 2 weeks' time to formulate Research groups & for preparation of Research Proposal.

Document ID. NBU-5 .

5.7.3. Summary of the Theme

The organisational policy has influenced the practices and shaped the culture of individualised work among staff, which is not aligned with the university and college's vision, which both supports and encourages teamwork and collaboration to help create a positive research culture. The policy has a negative impact on how academic staff interact and collaborate on research projects particularly among international staff.

5.8. Main Theme 7: Challenges in Collaboration

5.8.1. Sub-theme 1: Lack of Diversity in Research Collaboration

Collaboration among faculty members suffered as a result of the promotion requirements, notably between Saudi and international academic staff. International staff strive to get promoted in both Saudi Arabia and their own country to ensure that they do not lose their promotion in their country when they return back after finishing their contract in Saudi. As a result of adopting two different policies, international faculty members have to focus on research topics that are related to their context or that combine the contexts of Saudi Arabia and their own country. This inhibits them from focusing on university research priorities that are focused on specific research areas.

The international staff try to comply with both policies to get promoted in Saudi Arabia and in their country, but combining the two policies is impassable because of two challenges. The first challenge is with the affiliation name, they cannot utilise the same research article to apply for promotion in both countries. Promotion criteria requires the name of the university in the affiliation and rejects any other external affiliation. Therefore, international faculty members must select one of two affiliations: Saudi university or the university in their own country. The second challenge is that both policies require the researcher to be the primary investigator (first author) in order to be promoted:

> If I want a promotion here [in Saudi university] then, it should be according to the policy here. Some international staff need promotion in their university in Egypt, then they need the policy in Egypt. For example, if I need a promotion in my country and I am collaborating with you in research, my name should be first author, otherwise I will not get promoted their…different policy! *P:1*

Because of the above-mentioned challenges and policies, a culture of collaboration in research within the department is uncommon due to the difficulties in coordinating authorship and affiliation:

> So now they [international academic staff] did not even like collaborate with you to work together, like even when I came to the college, I want to collaborate with some and they said Okay, who will pay for the Journal? who will pay for the publish fee?! if I will, which affiliation should be the first? Is it the Saudi university or the university in their country? So, they [international staff] want the first affiliation is their country, so they can get the promotion. And so that's why there's not a lot of people in here can work with you to have the research. *P:8*

By reviewing the published articles in the college, I observed that the collaboration between faculty members is often formed based on the nationality. The absence of diversity in collaborative research was observed, although the college has academic staff from different nationalities. This was confirmed during the interviews when participants stated that they have a social media group which involves nursing academic staff in different universities across the Kingdom of Saudi Arabia. These groups are also formed based on nationality:

> We are all Philippines. So, we are trying to coordinate, collaborate with each other. So, I have friend in this university, in Hail University, in Tabuk University, and in Princes

> Nora University. So, we are all in different universities and we share the research experience. *P:6*

Although there is a benefit from these social media research groups which have researchers from different universities, the lack of diversity is also very obvious. These groups were formed based on the nationality or friendship:

> Joining a Research group in social media is very common among staff. Although the benefit from these groups is that it has mix of researchers from different universities in SA, it did not support the diversity in the research group. Factors such as nationality, and friendship play a major role on who will join these groups.
>
> *Observational Memo:5*

5.8.1.1. Summary of the sub-theme

Research collaboration among faculty members has become entirely reliant on organisational policies, without regard to the college or university's objectives and priorities. These policies resulted in a lack of diversity among the research groups. The lack of strong academic leadership regarding affiliation and authorship matters has further exacerbated this problem, as can be seen in the presence of research groups based on nationality.

5.8.2. Sub-theme 2: Lack of Interdisciplinary Collaboration

Interdisciplinary research collaboration (within organisation) is not very common in the college. Participants believed that focusing on only one research scope will limit the researchers' creativity to solve complex problems that need different parties with different specialities. Answering such complex research questions requires a research group across the medical and health science colleges:

> … how can we work together? not just maternity group, As I was taught in the UK, I can join any other field to do one research. It's not just, especially in the maternity.

> because of that, I see this the problem. we can do it one in other departments, I mean, the interdisciplinary. It's good idea in the future I hope you to do it. *P:2*

However, the university committed to make collaborations and partnerships with external organisations both locally and internationally in order to enhance research capacity in the university. The local collaboration and partnership involve Saudi universities and local hospitals. Internationally, the university plans and makes arrangements to collaborate with some of top universities in the UK, and the USA:

> …open channel and communication between our university and another organisation inside and outside the country. Also, we have Memorandum of Understandings with other external organisations to make like a research exchange between our faculty or students and staff over there, just to let our faculties acquire latest technology and latest ways to conduct research. *P:10*

5.8.3. Sub-theme 3: Absence of Collaboration with Clinical Setting

Benefits from collaborations with clinical nurses in hospitals was mentioned by many of the participants. However, some factors hinder the faculty in collaborating with nurses working in clinical settings. For example, an absence of collaboration agreements, between the college/university and the local hospitals, hinders faculty members from collaboration with nurses in clinical settings.

In the analysis of research committee meeting minutes, it was apparent that the college is aware about creating collaborative research connection which includes members from the nursing college and related medical and health colleges in the university. Also, the college has plans to start collaborative research to facilitate collaboration with external institutions:

> 2. Create Research Team: All committee members were agreed to formulate Research team in the college with the collaboration of all other departments of our institution.

> 5. Collaborative Research: If any faculty would like to do any research with collaboration of any hospital staff or any other Universities locally or internationally, we can encourage them to do their research. So, we can use the Resources like senior faculty, expert nurses in hospital who hold higher degree. We can also invite external partners of our research study.
>
> *Document ID. NBU-4*

5.9. Main Theme 8: Social-Media and Communication

Participants emphasised the role of social media to help connect with other researchers in the field from different universities. Social media makes it much easier to get in touch with other experts in the field who share the same or similar research interests. Some Social media groups involve researchers whose background is in nursing and who have a great experience in nursing research:

> I have a group in WhatsApp [Social Media App] that have some of like doctors [academic staff] in Saudi Arabia, like in nursing from different schools, we are interested to do Research. Anyone who would like to collaborate, we are here. *P:8*

> I am in group [Social Media group] with researchers that specialise, of course, in nursing. I have friend here working in different universities in the kingdom [Kingdom of Saudi Arabia]. We are all Philippines. So, we are trying to coordinate, collaborate with each other. So, I have friend in this university, in Hail University, in Tabuk University, and in Princes Nora University. So, we are all in different universities and we share the research experience. *P:6*

Social media serves as a facilitator for connecting researchers from various nursing colleges to engage in collaborative research activities. These research groups were independently established by individuals and not sponsored by a college or university.

5.10. Main Theme 9: Challenges in Communication

The theme disclosed some challenges that affect collaboration and communication in research, which include language barriers and gender barriers.

5.10.1. Sub-theme 1: Language Barrier

Participants revealed many issues related to how language influences communication and collaboration. The main two issue are: miscommunication between faculty members in the college, and between international staff (non-Arabic speaker) with the local community. The first issue is between staff themselves as they are from different countries (India, Philippines, Egypt) and using English language to communicate. This can lead to miscommunication and misunderstanding due to accent and pronunciation issues:

> also, I have a big problem with them [colleagues], especially in the accent when we talk. it takes time to understand them. *P:2*

The second issue is between international staff (non-Arabic speakers) and the local targeted population (ie, local Saudi community, whose mostly did not speak English). These variations in language make the communication between researcher and participants difficult. Those international staff are therefore not able to run projects without collaborating with other staff who speak Arabic in order to facilitate the writing in Arabic of documents, such as, consent form, survey etc., and for conducting interviews in Arabic:

> It's the language, language barrier. yeah, because if maybe if I'm going to start [research project] by myself and then, of course, I cannot write it (survey or interview question) in Arabic and then my constituents will be the students. You know what I mean if it will be written in Arabic language, these students will be able to grasp more

> what I want to ask, or you know, like that, so I think those were the main problem or barriers in starting research.. *P:4*

In regard to the Arabic language, some policy documents or university announcements are published only in the Arabic language. Non-Arabic staff need to find colleagues to translate the content into English because translator software/platforms are not very accurate:

> … you know it's okay. If you are an Arabic [speaker], it'll be like, very clear for the Arabic, but if you are non-Arabic speaker, so we cannot understand. *P:6*

These policy documents, that are written in the Arabic language, make it difficult for international staff members who do not speak Arabic to remain up to date on new or revised research related policies. Participants thought that the organisation failed to clearly communicate with its non-Arabic employees. In addition to the language issue, other participants reported that it was too challenging to find the policy documents on the university website:

> … it's really hard, because they just pop up as an Arabic, you know what I mean, Arabic you know. it is really hard time, even though, if you will click the translate, there will be some portions that are in Arabic. That's why I grouped up myself with Dr. T H [who speak Arabic] at least with the Arabic version, she can do it, you know, then I can go with the English version, like that. *P:4*

I noticed the above two issues when I was collecting policy documents as there is a difficulty in finding some documents and some were published in the Arabic language only:

> It was difficult to find some documents on the university websites. I had to contact various units to get a copy of some specific documents. In addition, there were also some documents that were not written in English, it was written entirely in Arabic.
>
> *Observational Memo: No.6*

5.10.2. Sub-theme 2: Gender Barriers

Some female participants find it difficult to start a collaboration with male researcher that she did not know or had not met him before:

> … I never did this actually [communicate to collaborate]. I'm not sure, is it because these groups [Social-Media groups] have faculty members from both gender but I'm not sure how I start with them. *P:8*

This generally reflected the Saudi culture around gender differences, although there has been a huge change around this concept in last few years. Currently though, communication and collaboration can still be affected when it is with the opposite gender.

5.11. Summary of the Findings

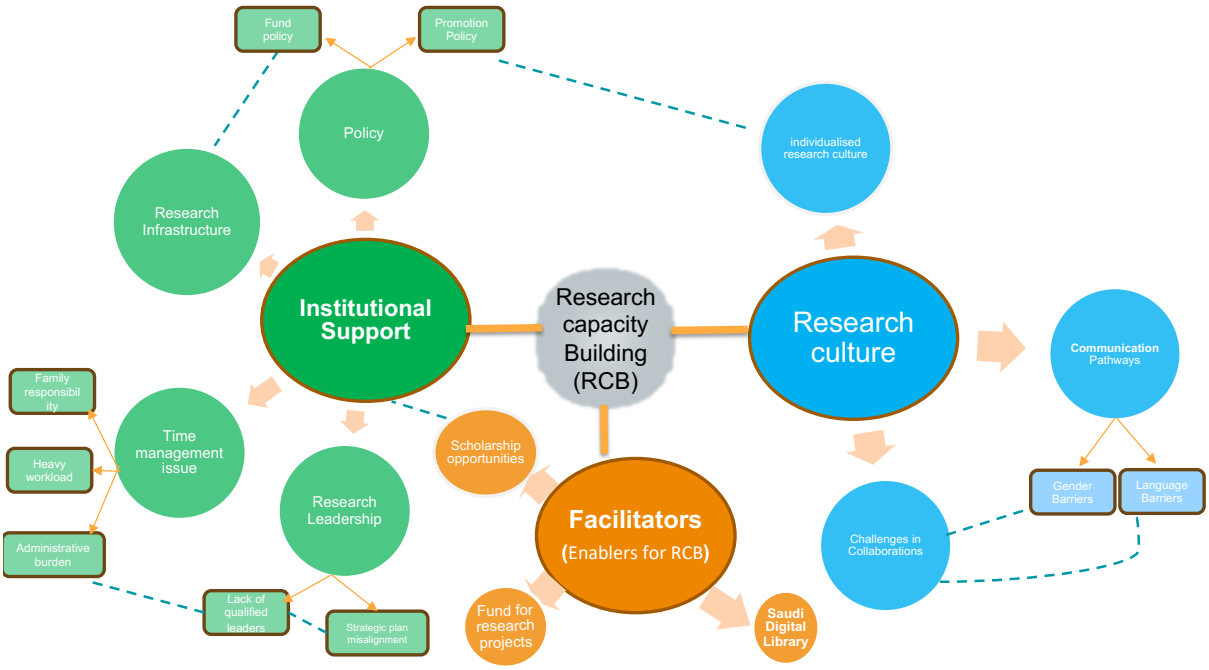
The results of the study indicate that the process of building research capacity occurs on multiple levels, and that these levels are not distinct but are interconnected to each other. Research capacity building was greatly impacted by two broad factors: institutional support and resourcing, and research culture and collaboration at multiple levels, including individual, college, organisation, and national.

The first part of the findings indicated that institutional support and resourcing were the main factors affecting RCB. The analysis of the data and the interaction of the identified themes led to the development of this conclusion. These themes encompassed timing issues (such as workload and external commitments), research leadership, research infrastructure, research capability, and financial issues (such as funds and reward systems). Collectively, these

themes yielded a profound comprehension and led to the conclusion that institutional support and resources were systematic issues in building research capacity.

The second part of the findings indicated that research culture and collaboration have mainly affected the RCB. The conclusion about research culture, and collaboration was developed through the interaction of many related themes during data analysis and interpretation. These themes included many issues related to research culture (competition, individualised activities, institutional policy), collaboration (clinical collaboration, diversity, interdisciplinary collaboration), and communication (gender barrier, language barrier). Collectively, these themes yielded a profound comprehension and led to the conclusion that research culture and collaboration were systematic factors in building research capacity. The interaction between the identified themes is illustrated in Figure 5.2

Figure 5. 2: *Factors affecting RCB in nursing college at new-established university.*



Note: Dashed lines signify the interaction between the identified themes and sub-themes.

A summary of the finding (barriers and facilitators) based on each level can be found on Table 5. 8

Table 5. 8: *A summary of the finding based on identified levels*

	Barriers	Facilitators
Individual Level	• Family responsibilities • Gender and language barriers (regarding research groups and collaborations) • Lack of research skills (confidence to conduct research) • Time management issues	• Specifying a time for research
College Level	• Lack of research leadership (qualified leaders, mentoring) • Lack of research infrastructure • Individualised research culture (competition, jealousy, lack of research groups) • Strategic plan misalignment (absence of action plan, university research priorities) • Heavy Workload (linked to staff shortages and administrative burdens) • Research infrastructure (absence of active research unit, and well-established library) • Absence of Interdisciplinary collaboration	• Scholarship opportunities • Scientific Research Day
University Level	• Retrospective funding system • Contradictory policy (such as promotion policy) • Partnership with local clinical settings.	• Funding for research projects • Support novice researchers.
National Level		• Saudi digital library

5.12. Potential Bias and Influence of Researcher's Perspective on the Finding

My personal beliefs, values, or assumptions, as well as my experience, may influence the interpretation of the data, leading to a conclusion that may reflect my bias rather than what is in the data itself. In this case study, the potential forms of bias in data analysis included selective bias and interpretation bias. Both are described below, including my effort to minimise their impact.

5.12.1. Selective Bias

Since I worked as an academic nurse in this case study setting, I have some previous perspective and expectations about factors affecting RCB in the college. During the data analysis and interpretation, I may have a tendency to see only what I expect or want in the data, resulting in a selective bias. Because of selective bias, I may add my own meaning to the data rather than allowing it to speak for itself. To minimise this bias, I maintained my awareness of my role as a researcher by examining the data comprehensively, avoiding overemphasising on data that aligns with my previous perspective or disregarding data that contradicts my beliefs. For example, despite the participants' responses about the availability of funds, which were against my experience and expectations, I stayed natural and allowed data to speak rather than my own experience in requesting funds.

5.12.2. Interpretation Bias

As an academic nurse, my personal experiences and emotions may, either intentionally or unintentionally, affect how I understand the data, which in turn may impact my conclusion by bringing my own experiences into the interpretation of the data. To mitigate this interpretation bias, I triangulated the data sources to cross-check findings, which can help reduce bias. The consistent findings in different data sources provided more accurate conclusions and reduced bias to researcher assumptions. For instance, the finding about the impact of promotion policy on developing an individualised research culture was mentioned by participants during interviews and was confirmed by checking related policies in document analysis.

5.13. Summary of the Chapter

The chapter presents the findings of Case Study 1, which is a nursing college in a newly established university in SA. Analysis revealed two main elements that contributed to the development of research culture and capacity: institutional support and resourcing, and research culture and collaboration.

The absence of effective research leadership in the college, the workload and administrative burden, the existing culture of competition, and the individualised activity at work all had a significant negative influence on RCB. The current research culture at the college is also shaped by university policy and regulations.

Chapter 6: Case 2 Overview

6.1. Introduction

This chapter presents a broad overview of case study two. To remind the reader, this case study is a nursing college in a public university in Saudi Arabia (SA), which is classified as a well-established university. The chapter starts by providing general information about the university. It then describes the nursing program, its development, the type of nursing programmes delivered, the demographic data about staff and students, and details the research activity in the college. Finally, it describes how access to the site was gained.

6.2. University Overview:

King Saud University (KSU) was founded in 1957 in Riyadh, the capital city of Saudi Arabia. KSU is the first university in Saudi Arabia and one of the top Saudi universities. According to QS ranking in 2022, KSU is ranked 4th in the Arab world and 237th globally. The university originally opened with two main colleges: Art and Science. Since that time, many more programs and colleges have been established. Currently, the university consists of more than twenty-two colleges in different fields, providing both undergraduate and postgraduate programmes. The university provides a wide range of medical and health science programs for undergraduates and postgraduates in six different colleges: medicine, dentistry, pharmacy, college for emergency medical services, applied medical sciences, and nursing.

6.2.1. Demographic Data

The number of current students in the university is approximately 30,000, and 10% are postgraduate students. The university has approximately 3,630 faculty members; 49% of these are international staff.

6.2.2. University Strategy

Table 6.1 provides details about the university strategy, including the vision, mission, value, pillars, and strategic objectives.

Table 6. 1: *University Strategy (vision, mission, value, pillars, strategic objectives)*

Visions	To be a world class university and a pioneer in developing the knowledge society.
Mission	To provide distinctive education, produce creative research, serve society, and contribute to building the knowledge economy and community through the use of innovative learning methods and cutting-edge technology, providing a creative thinking environment, and by ensuring effective international partnership.
Value	1- Quality and Excellence. 2- Leadership and teamwork. 3- Academic Freedom. 4- Justice and Integrity. 5- Transparency and accountability. 6- Continuous learning.
Pillars	1- Scientific Research. 2- Education and Learning. 3- Community Service. 4- Institutional work environment. 5- Self-revenue and investment diversification. 6- Fiscal balance and spending efficiency.
Strategic objectives	1. Creativity and innovation in scientific research. 2. Proficiency in academic programs and its outputs. 3. Contributing to community service and improving the quality of life. 4. Supportive and enabling governance for the university. 5. Increasing the efficiency of human resources for the university. 6. Self-revenue development. 7. Investment diversification and asset growth. 8. Improving spending efficiency for a sustainable financial future

6.3. College of Nursing Overview

The nursing programme was founded in 1977 as one of eight academic departments in the college of applied medical sciences, providing a bachelor's degree in nursing. The Postgraduate Programme in Nursing began in 1988 and was the first postgraduate program in nursing in the Kingdom of Saudi Arabia. This postgraduate programme was exclusively for female students and provided two tracks: Master of Science in Nursing. All programs are funded by the government.

In 2004, the department of nursing was turned into an independent college named the College of Nursing. In consideration of the Saudi government's view of nursing as one of the most essential specialisations in healthcare delivery, as well as the anticipated demands of health facilities for nurses, this decision was made in order to increase the nursing programme's capacity to supply healthcare facilities in SA with qualified nurses. The college of nursing established four departments: nursing administration and education, nursing community and mental health nursing, nursing medical/surgical, and nursing maternity and child health. These departments are responsible for teaching-related modules and for undergraduate and postgraduate programmes.

In 2015, the master's programme for male students was opened. Currently, the master's program encompasses eight tracks: nursing administration, nursing education, adult health nursing, nursing mental health, nursing community health, nursing maternal health, nursing child health, nursing medical surgical. Recently, in 2020, the nursing college developed the first PhD program in Nursing in Saudi Arabia.

6.3.1. Demographic data

6.3.1.1. Number of Students in Nursing Program

As of 2022, the total number of current students is 1562, including both undergraduate and postgraduate students. In these programmes, the number of students has increased to meet the Saudi Arabian vision to increase the number of nurses and avoid the expected shortage by 2030. The annual student enrolment for the master's degree is around 280-300 students and 8-12 students for the PhD degree. There are currently approximately 550 postgraduate students. The demographic data of the number of students in the nursing programme is presented in table 6.2

Table 6. 2. Demographic data of number of students in nursing programme

Item	Number of Students
Total number of current nursing students	1562 (both undergrad and postgraduate)
Total number of postgraduate nursing students (master and PhD)	Approximately 550 students
The annual student enrolment for the master's degree	280-300 students
The annual student enrolment for the PhD program	8-12 students

6.3.1.2. Nursing Academic Staff

The overall number of employees at the college, including both academic staff and non-academic staff, is approximately 570. There are 117 academic staff, including both Saudi and non-Saudi (international). The data for the specific number of international academic staff is not available. Table 6.3 provides an overview of all academic staff (both Saudi and international) per department and academic ranking.

Table 6. 3: *College Vice-Deanship for Graduate Studies and Scientific Research*

Department	Full Prof.	Associate Prof.	Assistant Prof.	Lecturer (master)	Teaching Assistant	Total
Nursing Administration and Education	1	2	8	5	6	22
Nursing Community and Mental Health	0	1	5	11	15	32
Nursing Medical Surgical	1	2	15	10	8	36
Nursing Maternity and Child Health	1	1	3	10	12	27
Total	3	6	31	36	41	117

The college has four vice-deanships: vice-deanships for academic affairs, vice-deanship for development and quality, vice-deanship for female students' affairs, and finally the vice-deanship for graduate studies and scientific research.

The vice-deanship for postgraduate studies and scientific research aims to assist postgraduate students in the college's departments and supervise research activities in the college. The vice-deanship has three units as follows: unit for scientific research, unit of postgraduate studies, and unit of teaching assistants and lecturers.

The vice-deanship for postgraduate studies and scientific research also intends to promote scientific research and create an appropriate research environment for academic staff and researchers by developing a specialised research centre in the college aligned with the university's goals of developing scientific research into a knowledge economy. A description of the research centre, research activities and publications in the college will be provided in the next two sub-sections.

6.3.1.3. Research centre

The research centre was established in 2009 and has committee members from the college of nursing. The research centre seeks to be a distinguished research centre in the field of studies related to nursing in the Arab region and internationally. The vision of the centre is 'Excellence in nursing science research and its different fields on a local, regional, and worldwide level'. However, the research centre did not provide a strategy or operational plan for achieving this vision.

6.3.1.4. Research Activities and Publications

In the academic year 2020-2021, a total of 167 research projects were approved by the ethical committees. Eighty-seven of these projects were completed and published, and 80 research projects are still under process. The college website does not provide information on publications from previous academic years. Even when checking the academic staff profile,

not all staff have their publications included. This limits the ability to review the activities in the last few years.

In addition to the above research projects, the nursing faculty members are also involved in many research conferences locally and internationally, as described in Table 6.4.

Table 6. 4: *Number of Participations in Conferences*

Place of Conference	Number of participations in conferences
Inside the University	26
Locally	33
Internationally	20
Total	79

The college provided workshops for research, which are designed for faculty members, postgraduates, and undergraduate students. These workshops include the following: research proposal for undergraduate students, publishing in scientific journals, statistic using SPSS software, statistic using Excel software, case study research, and the 9th annual postgraduate students meeting. It may be deduced from this that the college seems to be engaged in research in addition to the teaching activities, as shown by its emphasis on the development of research activities and the provision of research training for academic staff. More details are presented in. table 6.5.

Table 6. 5. *Research activities in academic year 2020- 2021*

Research activities	Number
Approved research projects	167
Research training (Workshop, courses, etc)	5

Note, research activities for previous years are not available.

6.4. Access to the Site

In October 2021, I first spoke with the head of research centre in the college of nursing to enquire about the feasibility of conducting my research in the college. He expressed a keen

interest in this topic and was open to meeting virtually if needed. He advised me to begin the ethics application through the Institutional Review Board (IRB) at King Saud University and provided me their email address and phone number. He emphasised his willingness to assist and support, if needed, during the ethics application and recruitment process.

The Institutional Review Board (IRB) responded promptly to my email, outlining the requirements and providing clear guidelines for applying for ethical approval.

Because I am considered an external researcher, the Institutional Review Board committee requested an ethics approval letter from my university in the United Kingdom. In addition, due to the Covid-19 epidemic and limited face-to-face interaction, the Institutional Review Board committee at KSU advised me to have an internal investigator (co-investigator from the nursing college) to carry out the participant recruitment process in the college. Thus, I contacted the head of the research centre again, and he volunteered to be the internal investigator to facilitate the recruitment process. This reflects what he stated earlier about his willingness to support me during data collection.

After receiving ethics approval from the University of Sheffield in November 2021 and meeting all requirements, I submitted my ethics application to the Institutional Review Board (IRB) in mid-November 2021, and final approval was granted within two months.

The co-investigator distributed the invitation link in the college's formal group, which comprises all academic staff. The participant recruiting process was quick, and I received eight consent forms within the first week of distributing the invitation link in the college's official group and college email list. The speedy recruitments could represent the research support at the college level.

The majority of the participants reported that the topic grabbed their interest and motivated them to take part, and they eagerly await the study's findings. They feel that participating in my study will help, in the future, to create and improve research capacity and culture in Saudi

nursing colleges. I was more motivated when I heard from participants about the necessity and importance of exploring nursing research capacity in the Saudi context. Generally, participants were aware of the importance of participation in research and viewed it as an obligation to assist other researchers in order to advance nursing research. This reflects the positive research culture at the college.

> I think this is one of my obligations, to give opinion and help by participating in your research. so you can improve nursing research. That's why I'm interested in your topic because you are going to explore perspective of nursing researchers. so, you can develop a solution in the future. *P16*

6.5. Chapter Conclusion Summary

This chapter provides an overview and comprehensive description of case study two. This includes the history of the current nursing programme and demographic information about the university and the college of nursing, as well as an overview of research activities at the college and a description of how access to the site was gained.

The positive research culture was observed in the college. This was evident during the ethics application and through positive interactions with academic staff and IRB committee members, where the investigator was welcomed and supported to conduct research. During the recruitment process, academic staff demonstrated their interest in the topic and promptly filled out related forms, demonstrating the college's value of research. This sense of commitment to research reflects the strong research culture in the college. The next chapter will provide the main finding of Case Study 2.

Chapter 7: Case 2 Finding

7.1. Introduction

This chapter presents the findings from the analysis of the data collected from case study two. The chapter explores factors that influence research capacity building (RCB) and shape research culture in a college of nursing at a well-established university in Saudi Arabia (SA). As noted in the Methodology chapter (Chapter 3), the findings were generated from an integrated analysis of three data sets: semi-structured interviews, document analysis, and observational memos that resulted from researcher observation during data collection and analysis.

The identified themes and sub-themes are linked to two broad areas: research support and research culture and collaboration. The chapter has been divided into two parts to reflect these two broad themes.

7.1.1. Document Description

Document analysis in this case study was completed for fifteen documents divided into four groups: organisational vision and mission (n=3), policy documents (n=5), research activity guidelines (n=5), and research centre documents at the college (n=2). Table 7.1 provides a full description of the included documents.

Table 7. 1*: Description of the Included Documents in Case Study 2.*

Documents Groups	Document ID	Document Title	Assessment Type
Group1**:** Visions and Mission (n=3)	KSU-1	Vision and Mission- University.	Comprehensive
	KSU-2	Vision and Mission- College of Nursing.	Comprehensive
	KSU-3	Vision and mission- Centre of Writing for English (CWE)	Comprehensive
Group2: research activity guidelines (n=5)	KSU-4	Initiative for Supporting High-Quality and Impact in Scientific Publishing	Comprehensive
	KSU-5	Oriented Research Groups program 1	Comprehensive
	KSU-6	Oriented Research Groups program 2	Comprehensive
	KSU-7	Publishing in Web of Science	Comprehensive
	KSU-8	Guidelines for research centres at King Saud University	Comprehensive
Group 3: Policy Document (n=5)	KSU-9	Applying for fund	Comprehensive
	KSU-10	Rules governing scientific research	Selective
	KSU-11	Regulations and Conditions for Research Group Application	Comprehensive
	KSU-12	Funding Postgraduate Students	Comprehensive
	KSU-13	University Regulations for Saudi Staff Members and the Like	Selective
Group 4: College Research Centre (n=2)	KSU-14	Nursing research council	Comprehensive
	KSU-15	Research funding at the college.	Comprehensive

The first group of documents related to the vision and mission of the organisation. Three documents were selected and analysed to show the value of research at the university and the college of nursing. These documents are the vision and mission of the university, college of nursing, and new-faculty funding unit. The assessment for these documents was comprehensive.

The second group of documents includes the guidelines for research activities at the university which include five documents: guidelines for research groups (n=2) and guidelines for publications and research centre (n=3). The assessment for these documents was also comprehensive.

The third group of documents contains a variety of organisational policies (n=5), mainly those that relate to research, including funding policies, promotion policies, rules governing scientific research, publication criteria, and regulations for research groups. Certain documents were assessed comprehensively, while others were evaluated selectively depending on the document's content and relevance to research questions.

The final group of documents includes documents related to the research centre at the college (n=2), including the research council and funding opportunities.

7.1.2. Participant Description

A total of nine interviews were conducted, and this included three types of participants: nursing academic staff, nursing academic leaders, and an internal stakeholder at the university.

The interviews were carried out in two stages. In the first stage, semi-structured interviews were conducted with nursing faculty members from different specialities and departments at the college of nursing, followed by interviews with nursing academic leaders at the college. Based on the findings from the first stage of interviews, the second stage of the interviews was designed and conducted with the leaders at the university's highest level. All of the interviews were audio recorded, lasted around 40-50 minutes, and were conducted remotely through Zoom video conferencing software.

The interview participants varied in relation to seniority, speciality, academic rank, and leadership/ managerial position. This variability in the sample gives a deep understanding of the RCB, as noted in Chapter 3. Table 7.2 provides a full description of the participants in this study.

Table 7. 2: *Participants Demographic Data*

ID	Gender	Nationality	Leadership Position	Job Title	Qualification	Specialty
P11	M	Saudi		Assistant Prof.	*MSN, PHD	Nursing Education
P12	F	Saudi	Vice-Head of Nursing administration Department	Assistant Prof.	MSN, PHD	Nursing Administration
P13	M	Saudi		Assistant Prof.	MSN, PHD	
P14	M	Saudi	Head of Nursing administration and education Department	Assistant Prof.	MSN, PHD	
P15	M	Saudi	Head of the Department of Medical-Surgical Nursing	Assistant Prof.	MSN, PHD	Medical-Surgical Nursing
P16	M	Saudi		Assistant Prof.	MSN, PHD	Community and Mental Health

P17	M	Saudi	Member of Nursing Research Council	Assistant Prof.	MSN, PHD	Medical-Surgical Nursing
P18	M	Saudi	Assisting of Vice-Dean of Academic Affairs	Assistant Prof.	MSN, PHD	Medical-Surgical Nursing
P19	M	Saudi	Vice-Dean for Graduate Studies and Scientific Research	Assistant Prof.	MSN, PHD	Nursing Education

Note: MSN stands for: Master of Science in Nursing

7.1.3. Observational Note

The data includes memos drawn from observations which were made during data collection (documents and interviews) and during the analysis process. Memos help provide a more thorough record of what was seen and experienced during the research process. The data from memos were integrated with the data from the interviews and documentary analysis.

Part 1: Research Support

The section of this chapter dedicated to findings related to support consists of five main themes and ten sub-themes. The first part of the findings explains how various levels of support have a significant impact on research capacity. Support was mentioned frequently by all participants, both implicitly and explicitly, and was viewed as both a facilitator and barrier to RCB. The main themes in this part are time management for research, research infrastructure, research capability/training, the need for orientation and mentoring programmes and finally, financial support.

7.2. Main Theme 1: Time Management for Research

Effective time management is crucial for academic staff to engage in research. Time management could be a challenge due to the high teaching load and administrative burden, and these are described in detail in the first sub-theme below. A strategy to manage time is then described in the second sub-theme.

7.2.1. Sub-theme 1: Teaching Load and Administrative Burden

The increased teaching load reduced the time available for other academic duties, especially research. Participants stated that overload in teaching is a barrier to conducting and publishing research:

> …we do have teaching responsibilities, we do have responsibility for our research, and for other community. So we have to serve of these three points, but the first point [teaching] is eating the other two points. The teaching responsibilities is taking over all the other two points. So that's a big issue. *P18*

> We have an overload. Some of the faculty, have overload hours in teaching and this maybe could be like a barrier to publish. *P19*

> …teaching is taken most of the time, especially with the high load for nursing instructors. *P14*

In addition, holding a managerial position is seen as a barrier to being an active researcher. Although academic staff who hold a managerial/leadership position were given reduced teaching hours, the leaders in the college are still suffering from the administrative burden that has an impact on managing their time for research:

> I am vice-head of the nursing administration and education department. Before that, I was very active, but the last two years, I'm not that active, with my busy time I just published only one paper in 2019, and today [in April 2022], I submitted the second one and I'm working in the third one, like imagine in three years! *P12*

To summarise, the lack of support from the college level to secure sufficient time for research has contributed to the current difficulty of time management at the individual level.

7.2.2. Sub-theme 2: Specifying Time for Research: A Strategy for Time Management

The academic leaders in the college encourage faculty members to allocate time for research in their schedule in order to effectively manage their time and create a balance between teaching, office hours, clinical duty, and other commitments:

> …faculty who's working in my department or on the college, they have to have their time for the research. Actually, we pushed them to put a research time in their schedule. So, everybody knew that professor X /is doing research /working on research in this time, so he/she is working on his own research. *P12*

Although participants mentioned the high teaching load and administrative burdens, they reported that specifying time for research is a very effective strategy. They used this strategy to help them in managing their time and allocating time for research, one day per week, or 8 to 10 hours per week, and this strategy worked well with them:

> It just like specify a day for my research and it works. *P17*

> If you specify your time for your work, for your family, your friends, other relations, you will be fine. *P11*

> I adjust my schedule, so one day, at least with my schedule to work on research activities. *P14*

> …try to find a specific day and time to work mainly only on research. *P18*

Although the effectiveness of these strategies, these practices are led by individuals themselves, and this time is not protected by the institution.

7.3. Main Theme 2: Research Infrastructure and Resources

The theme describes the university and college's efforts to build research infrastructure. In addition, some areas that need improvement are discussed. The theme consists of two sub-themes: first the physical infrastructure and resources at the university level, and then at the college level.

7.3.1. Sub-theme 1: Physical Infrastructure and Resources 'University Level'

At the university level, there is an effort to build infrastructure in order to provide an environment that supports research activity for faculty members and researchers:

> …it [the University] continuously develops the research infrastructure and works to offer attracting and rewarding environment that supports and fosters excellence and innovation for researchers.
>
> *Document ID, KSU-1*

The university has a very well-established library, 'King Salman Central Library', and the library provides IT services and free access to the Saudi Digital Library, which has more than 169 databases. The library provides free access for all faculty members, researchers, and students at the university:

> we have here the digital university library, which contains the Saudi digital library that provides most of the known databases that we can access either on campus or off campus. *P13*

The university also established the Centre for Writing in English (CWE). This centre aims to support faculty and researchers in the writing process and provide consultation, proofreading, and grammar checking facilities:

> Vision of the Centre: The Centre for Writing in English develops confident, responsible writers and cultivates excellence in academic writing.
>
> Mission: The Centre for Writing in English offers free, one-to-one consultations aimed at improving critical thinking and academic writing skills.
>
> THE CENTRE FOR WRITING IN ENGLISH AIMS TO:
>
> 1. provide consultations to meet individual academic writing needs across levels of proficiency.
>
> *Document ID, KSU-3*

Participants reported that the CWE is a valuable resource that supports academic writing and writing for publication:

> There are a lot of resources. Like for example, there is a centre. When you write your paper, you can send them, they can review it for you, for grammar, they can help you, they can assist you. *P12*

The university has established a robust research infrastructure, which could facilitate research activities among academic staff because it provides the necessary tools for undertaking research.

7.3.2. Sub-theme 1: Physical Infrastructure and Resources at College Level

The college of nursing has established a research centre to assist researchers in the college with many aspects of the research process, such as funding, IRB approval, and related rules and regulations. Participants, however, stated that the university or college should develop more research centres based on a specific field or interest. This would facilitate networking and connecting researchers who share similar research interests.

> if you visit universities overseas, you will see rooms have a sign, let's say: the chronic disease self-management research centre, the palliative cares research centre and so on. However, in the KSU at college of nursing, we don't have anything like that. I think, in the future, we will be implementing that system. *P18*

Academic leaders in the college generally consider that the college of nursing has qualified faculty members who can undertake and manage research projects. They refer to the current academic staff as 'human resources. They believe, however, that the school still lacks non-human resources such as a building, researchers' rooms, financial support, and research centres based on research interests:

> We do have faculty members with different educational backgrounds. Still, we are lacking in non-human resources, including the building, the research centres and the financial support. *P18*

Academic leaders also claim that a lack of non-human resources has a negative impact on the college's overall capacity for research:

> We do have the human resources, but when it comes to the other non-human resources we are lacking in capacity building, the funding, and the financial support. *P18*

Absence of a researcher's room [space for research activities] and lack of research assistants in the college were also mentioned by participants as a barrier to conducting research. They believe that the appointment of research assistants in the college and the availability of a researchers' room would facilitate the research process.

> we don't have a research assistant in the college I would say. I wish of the college works to get us some research assistants. they can help us really in conducting the research. *P19*
>
> we are working from our offices, and we work remotely. We work in an informal way, but we don't have a specific office space to carry out research and research-related activities? for research study. *P18*

7.3.3. Summary of the Theme:

Lack of the necessary research infrastructure and research assistants has had an impact on RCB on an individual level. The college leader pays less attention to developing related infrastructure that could help academic staff find a supportive research environment to conduct research.

7.4. Main Theme 3: The Need for Orientation and Mentoring Program

This theme describes the need for orientation and mentoring programmes for new faculty members at the college. The first sub-theme describes the need for an orientation program at the beginning of their career at the college. The need for a mentoring program is then discussed in the second sub-theme.

7.4.1. Sub-theme 1: It is Hard in the Beginning

Most of the new staff experienced challenges and difficulties in familiarising themselves with the new workplace environment. They consider this a significant transition phase in their lives. They argue that it takes time to adapt themselves to their new life on both personal and work levels. They claimed that they have an unclear image of research activities in the college:

> It is hard in the beginning. you feel that you are like in an ocean, and you do not know how to swim. *P16*
>
> when I transferred from abroad to Saudi Arabia, I felt like homesick things. Everything is new, the position is new, the work itself is new, the regulation in the school is new, everything is a new in your entire life. So, the first semester is just pass without doing any research. . *P17*
>
> I just returned to Saudi Arabia in 2019 and I'm considering myself in the transition phase, even though , I was born in Saudi Arabia, but the life and everything is changed. it takes time to just familiarise yourself and be adapt. *P18*

Participants mentioned that they had to explore and figure out all aspects of university research support by themselves without help from leaders in the college. This takes a long time and a lot of effort, which is seen as wasteful for the researcher as they seek to figure out everything independently:

> There is a lot of resources. For me, I figure them out suddenly, I mean, I didn't know before I know it from my colleagues only. *P12*

> - I've just explored where to find funds. Where to apply for IRBs , where to find non-profit organisations [for external fund]. *P11*

Participants believed that developing an orientation/mentoring program would help in eliminating and overcoming the challenges they faced in the first year of their career. This would facilitate the research process:

> I believe this is because there is no orientation and no mentorship programs. As a new faculty, I believe that we need mentors to facilitate our task and jobs and give us like their opinion and guidance to do our task. *P16*

The documentary analysis disclosed such support for new faculty members at the university level. The scientific research deanship established the 'New-faculty Members Unit,' and this unit was designed specifically to support new faculty members:

> The Unit [New-faculty Members Unit'] aims to attract new faculty members at the university to the scientific research environment, by providing financial support and providing an appropriate and encouraging environment for researchers.
>
> *Document ID, KSU-6*

Surprisingly, the participants are not aware of this unit. Through the interview with new faculty members, I observed an absence of knowledge about the unit. This confirms the importance of the orientation program for new faculty members in order to familiarise them with the available support provided by the university. The absence of an orientation programme for new faculty members was noted by many new faculty members as a barrier to

having a clear vision about research support, funding, and available resources at the university:

> …when I came, I feel that I have a blurred vision about research because there were no orientation programs for the young faculties such, where are the research centres? Where are non-profits organizations that support research? *P16*

7.4.2. Sub-theme 2: I Need a Mentor, I Don't Want to Reinvent the Wheel.

Participants stated that they have the ability to do research; however, they believe that mentors play a significant role in the development of research skills and the advancement of knowledge. Furthermore, mentors can save time by providing guidance and advice on opportunities for funding and the publication process:

> I see I am able to conduct research, however, I need mentors who have experience in research to evaluate my work, give me their opinion, to save my time. So, I don't want to reinvent the wheel. Some of the tasks that mentors can help and save your time so you can achieve other tasks with or other important tasks in research. *P16*

> …mentorship program helps the new researcher in the field to get involved and expand their knowledge and expertise in nursing research. *P11*

> …they [mentors] have experience with the journals and these things. Instead of spending time figuring out, mentor can save half of your time by recommendation or advice, and you go. *P16*

The college has not developed any formal mentoring program. However, one participant indicates how their involvement in a research group facilitates their research work:

> So, I have to dig and find out about all these things by myself. Nobody helped me except that I found a team who are interested in doing research with me. After I figured it out, I was able to jump in and start being fully involved with my research team. *P16*

7.4.3. Summary of the Theme

The absence of a mentoring program at the college has an impact on academic staff, particularly junior staff. They are not able to independently undertake research projects and apply for funding. A mentor could help familiarise them with related information and available resources.

7.5. Main Theme 4: Research Training and Education

The university provides opportunities for research training and helps in continuing higher education. The scholarship program for faculty members is one of the most valuable sources of support noted by the participants. However, there is a need for advanced research training at the university. The next two sub-themes will describe the value of scholarship programme and the need for advance training at the university and college level.

7.5.1. Sub-theme 1: Value of Overseas Scholarship Program

Participants show a high level of confidence in conducting research, and they referred to the overseas scholarship program, which they perceived as a great opportunity to build research skills and engage with researchers internationally. During the scholarship period (for master and PhD degrees), participants received the basic and most important courses that help them to conduct research.

> I relied [currently] on my expertise when I did my dissertation. Also, during my PhD program, I worked with my professors [academic supervisors] as a research assistant which gave me an opportunity to learn from them. This is what I believe is the training program for me. *P16*

Furthermore, this opportunity facilitated engagement and collaboration with research leaders from different countries, which enhanced the overall level of acquired research skills and confidence to conduct research:

> When I was a PhD student [overseas], I took different biostatistics courses, and I participated with famous research faculty members or researchers who are an executive editor for big nurse journals. I had a good training when I was a PhD student. *P18*

7.5.2. Sub-theme 2: The Need for Advanced Research Courses and Training

Data analysis reveals that advanced courses and training in research are required. The current available workshops at the university level focused primarily on the basic research skills and ethics, which are insufficient to help academic staff advance their research skills:

> It's always announced [for course/workshop] but nothing grabbed my attention that I thought I did not know. Most of the of the courses, I see it's either I experienced in my master education or my PhD dissertation, so nothing grabs my attention, but I would attend if there was a more advanced course like a statistic. *P14*

The academic leaders in the college also emphasised the importance of providing advance courses that are designed specifically to address the needs of faculty members in the college of nursing:

> in the beginning of each semester, the university sent us a schedule for workshop and training, but it's not enough to help them [faculty members] to start their research. We really need to work in that and make our own workshop for them in the department. *P12*

> we don't have a specific training, but maybe at the university level, sometimes they offer workshops or training and a statistics course? and, and how to write a research paper. But we don't have a specific plan for the faculty members. There is no plan in regard to the research [advanced research training program] *P19.*

7.5.3. Summary of the Theme

At the individual level, confidence in conducting research was noted. At the college level, research training is absent for the current academic staff, which is considered crucial for developing research capability in the college.

7.6. Main Theme 5: Financial Support

7.6.1. Introduction

The university offers a variety of funding sources to support academic research. Funds are provided for approved research proposals, and there are also funds as a reward for published research in high-impact journals. The university fund is typically paid retrospectively. In the next two sub-themes, the retrospective fund and the fund for new faculty members will be discussed.

7.6.2. Sub-theme 1: Retrospective Funding

The university supports faculty members, researchers, and students with funding for their research projects. The fund is usually paid retrospectively after publishing the research:

> ..fund is available, sometimes in advance, sometimes retrospectively, you would have to publish first then ask for the reward, like applying for the rewards because you published. *P:14*

The document analysis disclosed that the amount of funding is calculated based on the ranking of the journal. When a research proposal is submitted by a research group, 20% of the fund is provided in advance, and the remaining fund is paid back upon publication. The documentary analysis shows that the amount of funding in total is evaluated and calculated based on the rank of the journal as described in Table 7.3

Research Funding:

Table 7. 3: *Amount of funding Based on the Ranking of the Journal*

Journal Rank	Amount of fund-$	Fund distributed (researchers / Supplies and materials
Q1 journal	$7000	$2,770 for researchers, and $4,230 for supplies and materials
Q2 journals	$6400	$2,560 for researchers, and $3,840 for supplies and materials.
Q3 journals	$4.500	$1.800 for researchers, and $ 2,700 for supplies and materials
Q4 journal	$3700	$1,500 for researchers, and $2,200 for supplies and materials
		* Principal investigator must be the corresponding author

Note: Data is summarised from Document ID. KSU-15:Research funding.

Document ID. KSU-15

Although participants appreciate the university's funding, they consider the retrospective funding policy a barrier to starting new research because they cannot afford money for publication until they are paid back:

> We have national support, but sometimes the payment takes so long to be paid for your research. So, you pay with your own money, and maybe you may wait one year or more to get money back. If every time I spend a lot of money doing the research

> and I'm not being paid back, this is being challenging to not do research for a while until they pay me. *P19*

7.6.3. Sub-theme 2: New-faculty Funding Unit

The Deanship of Scientific Research established a grants unit specifically designed for new faculty members who had held their PhD degrees for less than two years. The unit primarily seeks to support new faculty members at the beginning of their research careers, as well as to identify outstanding scientists early so that they can be a fundamental pillar in the research in the future. The unit also aims to support the faculty member's professional growth and networking opportunities:

> The deanship behind this project primarily aims to support new faculty members and support them at the beginning of their research career. A new faculty member means a Saudi who has not been appointed to the rank of Assistant Professor for more than two years.
>
> *D*ocument *ID. KSU-6*

These grants typically have an application process and provide funding for research projects, conference travel, and publication costs. To facilitate and encourage new faculty member to start a research project, the Deanship of Scientific Research provides in advance a 40% of the approved budget for the project:

> The approved budget for the project varies according to specialization, so that it does not exceed [$18600], based on the recommendation of the scientific committee.
>
> - 40% of the research budget upon signing the contract
> - 30% of the budget upon acceptance of the mid-term report.

- 30% of the budget when accepting a short final report and submitting proof of its acceptance for publication.

*D*ocument *ID. KSU-15*

*The number of grants allocated for nursing college is not available..

7.6.4. Summary of the Theme

Funding policy has influenced research productivity at individual and college levels. Issues related to funds, such as delays in payment, contributed to slow progress in conducting research projects and hindered starting a new project.

Part 2: Research Culture and Collaboration in the Organization

The second part of this chapter gives an overview of the current culture of research and collaboration at the organisation. This part consists of three main themes and five sub-themes. The main three themes are: quality of research is a matter; culture of influencing and contribution; and finally, culture of collaboration in the organisation.

7.7. Main Theme 6: Quality of Research is a Matter

The university emphasises the necessity of producing high-quality research. It provides a solid system and policy that enhances ethical research practices and encourages excellence in research activities:

> King Saud University, in its research activities, has adopted strategies, policies and procedures that collectively aimed at promoting the quality and excellence of scientific research; besides, it has been encouraging compliance with ethical responsibility toward knowledge production, acquisition, retention, transfer, development and application.
>
> Rules Governing the Ethics of Scientific Research aims to: Improve the effectiveness, quality and excellence of the university scientific research locally and internationally.

Document ID. KSU-10

The university introduced a new policy for research practices known as 'the rules governing the ethics of scientific research at the university' which aims to increase research ethics awareness among college leaders, academic staff, researchers, and students:

> The main role of the "Rules Governing the Ethics of Scientific Research" is to raise awareness among all persons involved in scientific research at the

> university about these rules since many of the incidents of research misconduct come about due to lack of little knowledge about these rules, or to insufficient understanding of the nature and concepts of research ethics by researchers, students, research administrators and collaborators in certain research projects.
>
> Research supervisors are also required to raise the awareness among students and junior researchers on the ethical principles of scientific research in accordance with that is stated in this document and provide suitable environment where they can discuss issues related to ethics freely and transparently.
>
> *Document ID. KSU-10*

The emphasis placed at the organisational level on research ethics awareness has contributed to the concentration on producing high-quality research at the college level. It was observed during an interview with one of the college leaders who had a significant concentration on producing high-quality research at the college:

> The quality is the matter. So, we need the college really enhance or emphasise on the quality of the research rather than the quantity of the research. P19

7.7.1. Summary of the Theme

In summary, academic staff at the college of nursing are more aware of the value of high-quality research and are motivated to publish it in prestigious journals in their area as a result of the organisational fund policy that requires top journal rank. Therefore, organisational culture that emphasises the production of high-quality research has an impact on individual

perceptions towards the importance of quality research, which could contribute to the field of nursing. The following theme will thoroughly explore the culture of influence and contribution.

7.8. Main Theme 7: Culture of Influencing and Contribution

Despite the fact that promotion is one of the motivators for undertaking research, participants desire to make an impact by contributing to the development of the nursing profession, informing practice, and improving the health of the population in SA. The culture of research impact and influence is obvious among nursing academic staff. Participants believed that researchers have to have the vision to produce high-quality research and make significant changes in research output. The next two sub-themes will describe how faculty members are caring about the population and nursing practices at the hospitals.

7.8.1. Sub-theme 1: Caring about the Population

It was apparent that participants desired to make a positive influence by improving the quality of life for the Saudi population:

> ..besides, the benefits that we get from final findings we published, we hope it's influencing others life and improving all aspects of life. *P14*

> We can add to the body of knowledge. We help people to advance their life. *P18*

Academic staff is increasingly focused on enhancing the quality of population life, a result of the university's efforts to enhance the community through research. The university supports any research proposals related to advancing quality of life, and this support is aligned with Saudi Vision 2030. One of the Saudi Vision 2030 programmes is improving the quality of life, which aims to improve the quality of life for people living in SA. To achieve this aim,

the vision realising office at the university supports any research proposal that aims to advance the quality of life in SA. The responsibility towards the community/population motivates researchers to solve current health issues through producing high-quality scientific research:

> King Saudi University launch initiative for asking for proposals related to that Saudi 2030 vision. it's calling for research, supporting members to submit good proposals. Fortunately, we are lucky because our research proposal is at the final stage to get funded. So, and we are looking forward to it. *P18*

> There are different programs that you have to focus on to get that fund. One of these programs is related to the quality of life. You get the fund if you develop a really good proposal related to the quality of life. *P17*

The documentary analysis reveals the focus of the university in directing research to address the area of quality-of-life research, hence motivating faculty members, researchers and students to conduct research in this area:

> Responsibility toward Society - quality of life: directing scientific research to serve the society and elevate it and alleviating any suffering or danger that the community might face.
>
> Article (3): Motivate researchers, faculty and students to conduct original and innovative research that contribute to enrich the specialised knowledge and serve the community, and provide ways to accomplish, and benefit from them and universities as well.
>
> *Document ID. KSU-6.*

When academic staff return to SA after a scholarship, they often feel a sense of responsibility; they see themselves as having a responsibility to apply or transfer what they have learned overseas to make a positive change in the nursing profession and community in SA. This feeling of obligation and accountability could be seen as a way of paying back the faith and financial investment made by the university, i.e., the previous support during the scholarship time overseas:

> The prevalence of diabetes is very high in Saudi Arabia. So, when I came back to Saudi Arabia[after scholarship], I feel I am obligated to do research for this issue in Saudi Arabia. *P16*
>
> I learned several things [overseas], So, I need to be an influencer as a researcher [by research that has high impact]. *P18*

7.8.2. Sub-theme 2: Caring about Nursing Practices in SA

The participants believed that there is a need to increase awareness about the importance of nursing research and establishing evidence-based practice (EBP) among nurses in the clinical setting/healthcare organisations.

> …there is lack of research knowledge among nurses [in hospitals]..*P14*

> Also, for any nursing staff who's working in the hospital and any healthcare organization, we need to increase their awareness about the importance of the nursing research and increase the evidence-based practice. That is very important. *P18*

> I have to make more research. I want to benefit the health sector, especially the nursing. Especially I care about nursing staff. I care about the practice. *P17*

The difficulty in establishing EBP is associated with a gap between academics and clinical settings. Although the published research provides evidence and recommendations to change some practices, this evidence has not yet been applied to practice. Participants shed light on the absence of applying the research recommendations into practice in healthcare organizations. This is seen as a demotivator to conduct and publish more research evidence:

> we produce evidence, we published evidence, but sometimes you don't see that happening in the practice.P14

Participants connect this issue to two main reasons: first, the lack of coordination between the academic sector and the health sector, which creates a gap in applying the research findings and recommendations to the real practices. Second, the lack of authority for nursing leaders in healthcare organizations to change practice. This lack of authority is impeding healthcare professionals of all stripes, particularly nurses, from implementing evidence-based practices:

> Also, maybe the nursing or nurses in practice have the evidence, but sometimes they can't apply what the research recommend because they have lack of authority to change in practice. This is maybe something in this region, but lack of authority is big issue nursing specifically to change practice. *P14*

Participants believe that applying evidence to practice is a responsibility of the policymakers in the health sector. Their willingness and support are a crucial step to change practice based on the available evidence:

> It depends on the willingness of policymakers and their acceptance of research findings… The easier way is to disseminate[apply] nursing research in the practice by the research unit or evidence-based practice department or whatever they call it in the hospital, to show the policymakers and provide the proposal for change, based on the evidence. *P14*

> So, I think it's start within the policymakers. It is the policymakers' responsibility to check what's available or include nursing researchers in the nursing department[at hospitals] to examine the literature and what's the latest available evidence so they can use. *P14*

7.8.3. Summary of the Theme

The absence of a coordinating framework between education and health could be one reason for the challenges in implementing the findings and recommendations generated by published research.

7.9. Theme 8: Culture of Collaboration in the Organisation

The data analysis revealed that the university promotes and values collaboration among faculty members, researchers, and departments. It encourages individuals to work together. This theme includes a description of the orientated research groups program, the networking, and the effect of policy on research.

7.9.1. Sub-theme 1: Orientated Research Groups Program

The university established the Orientated Research Groups Program to encourage academic staff to join research groups. The documentary analysis shows that financial support is provided for any research group that meets the program criteria. The fund is paid in part when the contract is signed, and the remainder will be paid after the research is published in a

high-ranking journal. This programme reflects the university's objective to embed a culture of collaboration in research among its faculty, staff, and students:

> 13. The University encourages its researchers to engage in collaborative and cooperative projects with other researchers and distinguished scientists from local and international institutions; in addition, it promotes and supports multidisciplinary research.
>
> *Document ID. KSU-6*

The university also emphasises the diversity and interdisciplinary in research groups. The university gives more financial support to those research groups that involve students in the team:

> 1-3: multi-disciplinarily and coherence of the specialties within the Group must be taken into account.
>
> 2-3: A maximum of 1 point will be allotted in case of two students and 0.50 points will be allocated in case of one student in any paper.
>
> *Document ID. KSU-11*

The research group program gives opportunity and accessibility for all faculty members to form a research group and run research projects. The participants believed that support for research groups will improve the research work and facilitate ways to learn more about research processes.

> In regard of getting a group from the same university. It's really accessible. It's really good. Especially if you work in a same interest, this what I love about it, especially if the group are really collaborative. Plus, they improve the work. I learn from them too much. *P:17*

7.9.2. Sub-theme 2: Networking is like a Snowball.

In addition to the university's support to facilitate collaboration, individual efforts were highlighted as a crucial step in building networking and collaboration within and outside of the organisation. Participants believed that networking and collaboration should begin with those around them in the college, and then extend to researchers outside the organisation:

> I think the easiest way, is to start from your colleagues and faculty around you who share the same research interest and as you start, and then you can go and expand your connection and networking… you're going to find people who contact you, because they are interested in the same research as you, after they see your publications. It's like a snowball and people start getting to know you, getting to know your research interest. *P:16*

Participants believed that networking and collaboration are a responsibility of the faculty member to find a suitable research group and team members who have similar research interests:

> It's part of your job is to find people who share the same research interest. And you are responsible to build your teams and find people who are interested also in your research interest. It depends on you because nobody going to take your hand and help you with your research or team members. *P18*

These feelings of responsibility motivate faculty members to collaborate even with external researchers from other universities in Saudi Arabia. Participants believed that social media also provided opportunities to work with people outside of the organization, both locally and internationally. This is because social media facilitates networking and communication with researchers who share the same or similar research interests:

> The social media is another way too, I'm not saying advertising yourself, but with the social media you can get connected with anybody even not from Saudi Arabia, even from outside the country. So, I'm happy to work with anyone. *P18*

> we do have a WhatsApp group and all the members are PhD graduated students and working currently at different universities throughout the kingdom. We introduced ourselves and research interests. And that's happened to me like he is interest in cardiovascular management and mine is chronic disease management. The same topic, same interest and I'm currently working with that person. *P18*

The scholarship program has also enhanced international networking and collaboration. Participants emphasised the scholarship program's role in facilitating international connections with researchers. During the scholarship period, faculty members usually work with researchers and postgraduate students from different backgrounds:

> Internationally, especially when we graduated, each one put like his steps back there with the networking, either from the supervisor or from the well-known persons with similar interest. So, we communicate with them either to review articles or to invite for the conferences here [in SA]. *P11*

7.9.3. Sub-theme 3: Effect of Solo Research Policy on Research Progress

The Research productivity is one of the primary requirements for academic staff promotion. The promotion policy and regulations require faculty members to have a minimum of two solo research projects (individual work by one author only) as part of the promotion application. However, solo research can be demotivating to conducting research, as participants feel unsupported when working alone on a research paper or project. Working on

solo research is also perceived as a barrier to producing more research due to the slow progress of working on solo research:

> …you can't be active if you work alone. *P18*

> ..to apply for the associated professor, I have to publish two solo research and two another with the group… So, I'm working right now on about five to six research papers, some of them solo, by myself, but I'm honest, I am not fast. *P12*

> …the researcher cannot work solo for a long time… *P14*

The participant highlighted the difficulty in working alone on research, which involves extra work and effort. Participants believed that working as a team will produce higher-quality research as each member of the team has their own strength area in research, which reflects on the quality of the overall research work. In addition, teamwork can help to overcome any challenges faced when conducting the research:

> you have to have a team which each helps with own strengths. It's not easy to work alone. I am doing two Solo research. it's too much work when you do it by yourself. But when you have like a good research team with the same vision, mission, and focus that will help a lot, because you will divide the work between you and your team members. *P14*
>
> even though I involved in several research studies, working alone it's exhaustive. *P18*

7.9.4. Summary of the Theme

The promotion policy, specifically the policy on solo research, operates in direct contradiction to the intended strategy of fostering collaborative research networks. When a published paper is not the result of solo research, the promotion policy necessitates an increased quantity of published research, which academic staff usually do not prefer as it is seen as time-consuming. This implies that the academic staff might encounter difficulty reconciling these contrasting elements, potentially resulting in a missed opportunity for collaboration.

7.10. Summary of the Main Finding

The findings of this case study indicated that RCB is mainly impacted by institutional support, research culture, and collaboration regardless of whether this impact is positive or negative. The findings indicate that research capacity building is not a one-dimensional activity but rather takes place on several interrelated levels. Some issues that occur at one level are explained by another theme at a different level. For instance, time management issues at the individual level were more explained by other themes, such as heavy workloads and administrative burdens at the college level. The interaction between themes was crucial to deeply understanding the main factors affecting RCB. Below, I describe the barriers and facilitators that affect RCB in nursing colleges.

7.10.1. Facilitators to RCB

In case study 2, many initiatives were implemented at different levels with the aim of enhancing RCB. The majority of the initiatives took place at the university level.

At the individual level, participants reported that specifying time for research was very helpful in managing time and providing time for research activities. They believed that this

strategy had a positive impact due to its ability to create a balance between research and other academic commitments.

At the college level, the research centre was very helpful in supporting academic staff in their research processes, such as designing methodology and writing grant proposals or applications. In one academic year, the total approved grant applications were approximately 167. The research centre's critical role in facilitating the research process may account for the significant number of approved grants.

At the university level, the Scientific Research Deanship implemented numerous initiatives to facilitate research activities across the university, including the nursing college. One of the effective initiatives is establishing a Centre for Writing English (CWE) to support academic staff and students with their academic writing. Academic staff views this initiative as a tool that facilitates writing for publication and dissemination.

Another initiative is the Overseas Scholarship Program. Participants who have the opportunity to study abroad greatly value this opportunity, as it not only enables them to pursue higher degrees but also provides opportunities for networking and collaboration.
I noticed that the majority of the participants who received this opportunity demonstrated a strong sense of responsibility towards research. They desire to transfer the knowledge they have acquired abroad in order to bring positive change in the nursing profession and community of SA.

The university's new-faculty funding unit also provides support for novice researchers to run research projects with advanced payment of the fund (around 40%) to facilitate the research process.

The university addressed a new policy for research practices known as 'the rules governing the ethics of scientific research at the university', which aims to increase research ethics awareness among college leaders, academic staff, researchers, and students. The university's emphasis on research ethics awareness has led to a focus on producing high-quality research at the college level. An interview with a college leader revealed the college's significant emphasis on producing high-quality research, in line with the new policy for research practices. Figure 7.1 summarises the aforementioned initiatives and facilitators.

Figure 7. 1*: Summary of facilitators and initiatives to RCB*

7.10.2. Barriers/factors Affecting RCB

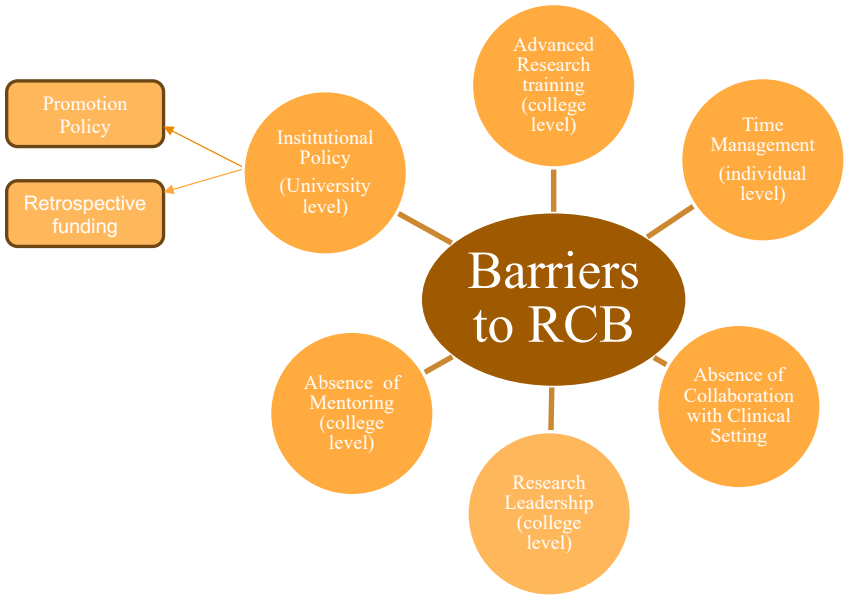
Case study 2 revealed numerous barriers at various levels, impeding RCB efforts. The majority of the initiatives took place at the college level.

At the individual level, time management was an issue facing most participants in this study. It is linked to cultural factors, such as family responsibilities, and contextual factors, such as a heavy workload. The difficulty in finding time for research has a negative impact on research productivity among academic staff in the college.

Numerous factors are affecting RCB at the college level, including a lack of mentoring, research leadership, and advanced research training, all of which are impacting the college's efforts to build its research capacity.

At the university level, the findings identified two primary issues that significantly impact RCB: the promotion policy and the retrospective funding system. The promotion policy requires solo research, which hinders collaboration among academic staff, particularly the novice researcher. The retrospective funding system has impacted the research process due to financial constraints. Figure 7.2 summarises the barriers affecting RCB.

Figure 7. 2: *Summary of the barriers to RCB*



7.11. Potential Bias and Influence of Researcher's Perspective on the Finding

I acknowledged that my own beliefs, values, and experiences might affect how I analyse and interpret data. It is impossible to eliminate my influence (as a researcher) on the data interpretation, but I tried to minimise biases in data interpretation.

My nursing background and my experience as an academic nurse may bring some initial thoughts and beliefs about factors affecting RCB in nursing colleges in SA. These pre-concepts and expectations could influence the interpretation of findings, as I may consciously or unconsciously seek out, interpret, and retain data that confirm my pre-existing beliefs, leading to confirmation bias. To mitigate this, I triangulate the data sources (including three different data sets) to cross-check findings, which can help reduce confirmation bias.

7.12. Chapter Conclusion

The chapter presents the findings of Case Study 2, which is a nursing college at a well-established university in SA. The analysis revealed a number of factors that facilitate or hinder RCB. Support and resourcing, collaboration and networking, and communication significantly influenced research capacity building.

The absence of an established communication channel between the higher education and health sectors contributes to the difficulty of implementing evidence-based practice (EBP). Academic staff considers this to be a demotivating factor for publishing high-quality research.

The organisational policy and priorities have a positive impact on the research culture in the college. However, the contradiction between national policy (solo research) and university priorities and objectives greatly affected the development of RCB.

8. Chapter 8: Cross-case Finding

8.1. Introduction

This chapter presents the findings from the cross-case analysis of data from the two case studies presented in the previous chapters. Cross-case analysis allows us to explore similarities and differences across cases and helps to gain insights into the issue being investigated. Thematic analysis was used to analyse the data from the two case studies. The chapter explores factors that influence research capacity building (RCB) and shape research culture in nursing colleges in Saudi Arabia. This cross-case analysis resulted in three main themes and eight subthemes. The main three themes are: strategic leadership, managing resources and support, and collaboration and communication. Figure 8.1 shows the main themes and sub-themes of the finding. Each theme and its sub-themes are discussed below.

Figure 8. 1: *Main themes, and sub-themes of the findings*

8.2. Main Theme 1: Strategic Leadership

The analysis of the wider vision of both organisations, their policies, and their strategic and operational plans has uncovered three major issues that impact the development of research

capacity. The first is the inconsistency between the strategic and operational plans. The second is prioritising research. The third is a contradiction in policies. These issues are covered in the following three subthemes.

8.2.1. Inconsistency Between the Wider Institutional Strategic Vision and the College Operational Plan

Both cases have explicitly stated an exemplary vision and mission that prioritises research and regards it as a fundamental/integral component of the institutions' objectives. Nevertheless, the wider vision of the institution is often not successfully translated into actionable plans and initiatives. An inconsistency was observed between the university vision and the operational plans of the colleges. For example, in case study one, the university strategic plan focusses on specific areas of research, including common chronic diseases in the Northern Border Region, epidemiological studies, eHealth development studies, environmental health studies, and drug development and safety. However, at the college level, research groups/interests were not focussing on these research areas. Instead, the developed research groups were based only on the academic staff's interests, regardless of the university's prioritisation of research areas. In case study 2, participants stated that they individually tried to align their research with national and university priorities, and nothing was formally stated at the college level.

While research was encompassed within the wider vision, mission, and objectives of the institutions, it received comparatively less attention at the operational and practical level than other academic activities such as teaching and clinical duties. Both colleges lack strategic and action plans for effectively implementing their institutions` vision, mission, and objectives related to research.

The inconsistency between the strategic and operational plans could be linked to the absence of research leaders in the colleges. The data in the case studies reports a limited number of

research leaders who have the ability to develop an effective research strategic plan that is aligned with the university's wider vision. In the first case study, at a newly established university, academic staff members, particularly those in the early stages of their careers, expressed the belief that the lack of research leaders has had an influence on how research activities are managed/led at the college. This belief could be confirmed by the findings of the document analysis, which showed that the college did not adopt a strategic plan for research until 2022, even though the institution was established in 2007. One possible explanation for the delay in creating a research strategic plan is that the institution does not, or did not until recently, have research leaders to guide research activities.

In case study two, the college is part of a well-established university and has access to experienced researchers; nonetheless, in the analysed documents, there is no reference to a specific strategic plan for research implementation at the college level.

8.2.2. Prioritising Research

The values and priorities of academic leadership at the colleges play an important role in the ability to develop research capacity, especially where teaching is viewed as the most important activity. In both cases, the academic leaders have primarily prioritised teaching, clinical duties, and other academic activities over the development of research capacity. They believe that shifting the focus towards research is a secondary goal after developing a strong nursing educational programme and infrastructure. This focus on teaching could be linked to the effort to meet the national objective of increasing the number of nursing staff in SA. This national objective seeks to avoid the expected staff shortage by 2030 in SA.

This concept of not prioritising research can result in misleading or neglecting research activities compared to other academic activities. Consequently, limited resources and support may be allocated towards research activities, hindering the development of research capacity in nursing colleges. This includes limited support to create a suitable research infrastructure,

facilitating funds, and providing time for research. This limitation occurred because of an issue with how to manage the resources and support at the college.

8.2.3. Contradictory Policy

Collaboration in research plays an important role in producing high-quality research. Consistency between policies and operational plans is a crucial element in accomplishing an institution`s objectives. This consistency in policies must be presented at both the organisational and operational levels.

Despite efforts at the college level to promote collaboration and research groups, the organisations often implement policies and regulations that contradict college objectives. For example, at the organisational level, the solo research policy for promotion in SA explicitly requires academic staff to produce at least two individual (single author only) research papers. Consequently, staff prefer to work independently on research papers, reducing the opportunities that come about through collaboration.

The ministry of higher education in Saudi Arabia has issued the policy of solo research, which is applicable to all Saudi universities. The rationale for formulating this policy was neither apparent nor explicitly stated in the policy documents. In both case study sites, the solo research policy is viewed as a barrier that discourages collaborative working.

In the first case study site, the solo research policy negatively fosters a culture of individualised work and competition between academics within the same department. This was evident among academic staff because they preferred to work alone and get promoted with the minimum number of publications. In the second case study site, the participants stated clearly that solo research results in slower progress and lower quality than collaborative work. They believed that when multiple researchers collaborate on a single research project, they generate more useful findings.

8.2.4. Summary of Theme

Academic leadership at the organisational and college levels has a significant effect on RCB due to inconsistencies in the strategic and operational plans, as well as contradictions in the policies and regulations of the organisation. This problem has been exacerbated by a relative absence of research leaders, which results in research activities not being given the same priority as other academic activities.

8.3. Main Theme 2: Managing Resources and Support

At the college level, a lack of research leaders has great impact on managing resources and providing support for research activities. Despite the fact that organisational support is available, the absence of facilitating resources and support like infrastructure, time, and funds was observed in both colleges. These three areas are discussed in the following three sub-themes.

8.3.1. Research Infrastructure.

In spite of the efforts made by the academic leadership to create an environment that is supportive for researchers, nursing colleges often still lack essential research infrastructure, such as research units, research centres, lab supplies, access to software, a mentoring system, and a space that is suited for researchers. The absence of robust research infrastructure is a result of not managing the current/available resources effectively. Consequently, research activities have been negatively affected.

In case study one, the academic staff had the impression that the absence of a research infrastructure may be one reason for the limited amount of research that was conducted at the nursing college. The results of the second case study provide credence to this concept, since academic staff viewed the presence of a research infrastructure, such as the research centre and writing centre, as very beneficial and that helped facilitate their research activities. However, a number of academics in the second case study also felt that the researchers' needs could not be met with the present research infrastructure unless it was better organised by

creating research areas of interest and research groups that are aligned with institutional objectives and academic staff interests.

8.3.2. Provision Time for Research

Managing time for research is a challenge that affects building capacity in nursing colleges. Academic staff members noted that they struggle to find time for research in addition to their teaching, administrative, and clinical duties. The lack of dedicated time for research limits the ability to undertake research activities at the college. In both nursing colleges, allocating time for research is problematic. The data shows that the time for research was impacted by internal and external barriers that hinder academic staff from being active in research.

The internal barriers include the heavy workload and administrative burdens, and these might occur because of the significant focus on teaching and clinical duties over research. This focus on teaching leads to an imbalance between teaching and research time. The nature of the nursing curriculum, which is both theoretical and clinical, along with the administrative burden, staff shortage, and rising number of nursing students in nursing colleges across SA, leaves little time for undertaking research, which is often seen as less of a priority.

The issue of managing time for research is becoming more complex because of the absence of formal support from academic leaders to facilitate time for research. It was apparent in the policy document in which the colleges formally distributed the staff's schedule for three tasks, teaching hours, clinical hours, and office hours, were given priority. The academic staff ordinarily found time for research outside of work hours, such as on the weekend or during holiday breaks. The lack of support in reducing teaching hours limits opportunities to find time for research activities. The action of the academic leadership to manage workload was highlighted as an essential factor in facilitating time for research and eliminating these internal barriers.

In addition to the above internal barriers, external barriers might also impact individuals` willingness to be involved in research activities. These external barriers include, but are not limited to, social and family commitments, which occur among most of the academic staff. To overcome these barriers, both internal and external, the academic staff tried some strategies, like specifying time for research, and this strategy was useful, to an extent, in managing time and providing space for research activities. However, this strategy is led by individuals themselves, and this time is not protected by the institution.

8.3.3. Funding Opportunities and Related Issues

Lack of funding for nursing research is one of the factors seen to hinder the building of nursing research capacity. Participants reported that in the majority of research projects, researchers rely solely on institutional funds, which are extremely limited and subject to availability. The internal fund complexity and the high level of competition to secure such funding often demotivate staff to conduct research projects. In addition, the delay in the funding process and the retrospective funding system (funding upon completion of the project) both impede the successful completion of research projects, which indicate that the internal funding process is complex and creates a lot of frustration.

Members of academic staff who are actively involved in research perceive that the funding delay and retrospective funding system are barriers because both might slow down research productivity.

The culture of involving external funders from outside the organisation, such as government agencies or non-profit organisations, has not yet been embedded in SA. However, at the individual level, faculty members had attempted to get external funding but had difficulty obtaining this. They believed that the institutions failed to support staff by developing a policy that allowed and encouraged them to apply for and obtain this external funding. In the policy documents analysed at both case study sites, only internal funds are reported as

funding sources. institutions have not yet established guidelines or regulations for submitting proposals to external funders. It is so difficult, if not possible, to apply for external funding without a policy that guides and legally protects researchers when applying for such funding.

8.3.3.1. Inequity in Financial Support

Although all academic staff members are equally qualified for institutional funding to support research projects, there is a disparity in how funds are allocated for conference attendance. The provision of financial support has been specifically allocated for Saudi personnel who hold a doctoral degree. This support covers various expenses, including conference fees, travel, and other related costs. However, the remaining staff may only take paid leave on the days of the conference, and these paid leave days are not detected from their annual leave. There was concern about allocating some financial support to certain members of staff, as it could elicit perceptions of unfairness. This may also present difficulties among those excluded staff and missing opportunities to participate and submit their research to scientific conferences.

8.3.4. Summary of the Theme

The lack of research leaders at nursing colleges significantly impacts the management of resources and support for research activities. Despite organisational support, there is often a lack of effective management of resources like research infrastructure, funds, and allocation time for research. Since there is a lack of formal support at the college level, the burden of managing how to overcome these barriers falls on the shoulders of the academic staff, who are not always successful in doing so.

8.4. Main Theme 3: Collaboration and Communications

It was apparent from participant accounts that research collaboration is often created informally by individuals and takes place primarily at the college level. Similarly, at the national level, participants were aware of a few research groups around the country that are

formed by individuals who are affiliated with a variety of educational institutions. The use of social media makes the development of inter-organisational collaboration and networking much easier. Nevertheless, data from the two case studies suggests that formal inter-organisational and inter-disciplinary collaboration are not very common within nursing educational institutions in SA.

As nursing is a clinical discipline, the lack of collaboration with clinical settings had a significant impact on research capacity and highlighted a gap between academic and clinical settings. Collaboration between academic and clinical settings was not mentioned in the policy documents from either case study site, but it was discussed at length in interviews at both case study sites. Despite the recognised need for it, academic staff's expectations regarding collaboration with clinical settings usually remained unmet. Participants reported that academic researchers face obstacles in their attempts to conduct research in healthcare settings due to the absence of such formal collaborations between academic institutions and clinical settings.

Although academic staff noted that efforts have been made to carry out research in clinical settings, various problems have arisen, including difficulties in accessing patient populations and data as well as communication problems. The lack of a transparent communication channel creates challenges in collaborating with personnel working in healthcare organisations. These problems may be related to the absence of formal partnerships between academic and clinical institutions, which then makes it difficult to carry out research projects in clinical settings.

Beside the impact of the absence of formal partnerships on research collaboration, there is another factor that makes collaboration more complex. In both cases sites, academic staff members rarely undertake another clinical role in clinical settings. They usually only play a role in academic settings. In contrast, clinical nurses in the hospital do not have any research

roles. In SA, it is very common to work in one place, either an academic or clinical setting. This gap between academic and clinical roles limits the opportunities to conduct research and exchange knowledge across these two different settings.

8.4.1. Lack of Awareness About Participating in Research

Academic staff members are immersed in a culture of influencing and improving health practices and public health. The majority of the academic staff reported that they are driven by a desire to contribute to research bodies in order to advance nursing as a profession and to benefit the community as a whole. However, when academic staff carry out research in the clinical setting, the nurses and patients are generally not aware of the importance of participating in research. Lack of awareness is a significant problem that affects the productivity of research. The majority of academic researchers who carry out their work in hospitals and other healthcare institutions, particularly those located in rural regions, find that the process of recruiting participants is a significant obstacle to undertaking research.

In the first case study, carrying out research in rural areas might be difficult since there is a general lack of awareness regarding the importance of research. The same thing also happens in the second case study when there is not much awareness of research, which makes it difficult to recruit nurses and patients in the clinical setting. The low level of awareness among clinical nurses may also be connected to the absence of formal collaboration between academic and clinical settings.

8.4.2. Lack of Authority to Change Practice

Despite the fact that there is published evidence available, putting that evidence into practice might be difficult since healthcare organisations often lack the power to alter established protocols. The challenges that policymakers experience in translating research findings into practical clinical applications can be discouraging for academic staff, which can lead to a reduction in the amount of research undertaken. The majority of participants who are actively

engaged in research believe that publishing findings without applying them to practice is a demotivator for conducting additional research and developing further evidence.

The participants make a link between this and the fact that nursing professionals do not have the authority to implement this evidence into their practices even when evidence is produced. The lack of coordination between nursing research leaders in the higher education sector and health sector was recognised as hindering the implementation of evidence-based practices. Furthermore, the absence of an official institute that supervises health research and facilitates knowledge exchange could be a strong reason for the difficulties in translating research findings into knowledge and practices. Recently, in August 2023, the Saudi Council of Ministers (the Supreme Council of Government in the Kingdom of Saudi Arabia) made the decision to establish the National Institute for Health Research (NICH).

However, there is no clear image about how the institute will support the translation of research findings into practices, particularly in nursing research. The institute board has members from both academic and clinical settings with different backgrounds, including medicine, pharmacology, and medical laboratory. However, none of the members has a background in nursing. The absence of expert nursing researchers in the institute may result in a barrier to facilitating nursing research findings in order to translate them into practice. Since NICH was established very recently, more time is needed to evaluate or measure the outcome of the support for nursing research.

8.4.3. Summary of the Theme

Research collaboration in nursing is often informal and formed by individual effort, which is not supported by institutions. Academic staff face significant obstacles in conducting research in healthcare settings due to a lack of formal collaborations and a lack of awareness about the importance of research participation. Furthermore, a lack of authority to translate evidence and change practice further demotivates academic staff from conducting research.

8.5. Potential Facilitators for RCB

Table 8. 1: *Summary of Facilitators for RCB*

Facilitators to RCB	
Strategic Leadership	Consistency between policies and operational plans is a crucial element in accomplishing an institution`s objectives. This consistency in policies must be presented at both the organisational and operational levels.
Support and resources	The scholarship programme, which provides an opportunity for continuing higher education and training.
Provision time for research	The action of/from the academic leadership to manage workload was highlighted as an essential factor in facilitating time for research and eliminating these internal barriers. specifying time for research strategy was useful, to an extent, in managing time and providing space for research activities.
Funding	Considering external fund source is perceived as facilitators to implement research projects.
Collaboration and networking	The use of social media makes the development of inter-organisational collaboration and networking much easier.

8.6. Summary of the Cross-case Findings

This section includes a summary of the main factors to RCB with a comparison of the two cases. Table 8.2 provides a summary of the main factors affecting RCB, showing commonalities and differences between the two cases. The table was utilised to best present the finding based on the factors and where was mentioned: in case 1, case 2, or in both.

Table 8. 2: *Summary of the Cross-case Findings*

Main Finding		Where was mentioned in CS1, CS2, or Both	
Main Theme	**Sub-theme**	**CS1**	**CS2**
Strategic Leadership Issues	**Contradictory policy** - The solo research policy for promotion in SA	In the first case study site, the solo research policy negatively fosters a culture of individualised work and competition between academics within the same department.	In the second case, solo research results in slower progress and lower quality than collaborative work. They believed that when multiple researchers collaborate on a single research project, they generate more useful findings.
	Inconsistency Between the Wider Institutional Strategic and department.	In both cases, the wider vision of the institution is often not successfully translated into actionable plans and initiatives. An inconsistency was observed between the university vision and the operational plans of the colleges.	

		The developed research groups were based only on the academic staff's interests, regardless of the university's prioritisation of research areas.	Participants stated that they individually tried to align their research with national and university priorities, and nothing was formally stated at the college level.
		the college did not adopt a strategic plan for research until 2022, even though the institution was established in 2007.	in the analysed documents, there is no reference to a specific strategic plan for research implementation at the college level.
	Prioritising Research	In both cases, the academic leaders have primarily prioritised teaching, clinical duties, and other academic activities over the development of research capacity.	
Resources and support	**Research Infrastructure**	In case study one, the academic staff had the impression that the absence of a research infrastructure may be one reason for the limited amount of research that was conducted at the nursing college.	Although of the robust research infrastructure, the researchers' needs could not be met unless it was better organised by creating research centres or areas of interest and research groups that are aligned with institutional objectives and academic staff interests.
	Provision Time for Research	In both nursing colleges, allocating time for research is problematic. Academic staff members noted that they struggle to find time for research in addition to their teaching, administrative, and clinical duties.	
	Funding Opportunities and Related Issues: - Absence of external funding research	Both case study sites, only internal funds are reported as funding sources. The institutions have not yet established a guideline or regulation for submitting proposals to external funders.	
	- Retrospectives funding	The delay in providing the approved fund for research is perceived as a disincentive to apply for funding and for conducting a research project.	Academic staff who are actively involved in research perceive that the funding delay and retrospective funding system are barriers because both might slow down research productivity.
	- Inequity in Financial Support	There was concern about allocating some financial support to certain members of staff, as it could elicit perceptions of unfairness. This may also present difficulties among those excluded staff and missing opportunities to participate and submit their research to scientific conferences.	

Collaboration and Communications	- The lack of collaboration with clinical settings.	Both cases, participants reported that academic researchers face obstacles in their attempts to conduct research in healthcare settings due to the absence of such formal collaborations between academic institutions and clinical settings.	
	- Gap between academic and clinical roles	In both cases sites, academic staff members rarely undertake another clinical role in clinical settings. They usually only play a role in academic settings. In contrast, clinical nurses in the hospital do not have any research roles. In SA, it is very common to work in one place, either an academic or clinical setting.	
	- The lack of a transparent communication channel creates challenges in collaborating with personnel working in healthcare organisations.	In both cases, to carry out research in clinical settings, various problems have arisen, including difficulties in accessing patient populations and data as well as communication problems.	
	Lack of Awareness About Participating in Research	In the first case study, carrying out research in rural areas might be difficult since there is a general lack of awareness regarding the importance of participating in research.	In the second case study, participants had a difficult experience to recruit nurses and patients in the clinical setting due to the low awareness about the important of participating in research.
	Lack of Authority to Change Practice		The lack of coordination between nursing research leaders in the higher education sector and health sector was recognised as hindering the implementation of evidence-based practices.

8.7. Ecological Model

8.7.1. Introduction

The results of the study indicate that the process of building research capacity occurs on multiple levels and that these levels are not distinct but are interconnected to each other. Each level is therefore significantly influenced by the other levels. The majority of the problems, according to the findings of the research, are present on more than one level, and certain elements/factors exist on one level, but their effects appear on another level. These levels are individual, college, organisation, and national. The ecological approach, initially presented

and discussed in the scoping review findings (Chapter 2), is utilised again here to illustrate these levels and their interconnections.

8.7.2. Individual Level

At an individual level, the academic staff show confidence in their research capabilities. This comes mainly as a direct result of the scholarship programme, which provides an opportunity for continuing higher education and training. However, many factors at higher levels have a significant impact on their ability not only to continue to develop research capacity but also to take opportunities to enact this capacity by undertaking and disseminating further research. Academic staff are indirectly forced to work individually due to particular policies at the organisational level, which indirectly discourage collaboration among staff and foster an individualised culture at the college level. This implies that academic staff became individually responsible for building their own research capacity, which thereby limited the opportunity to develop capacity through joint endeavours with colleagues. Despite these restrictions, staff are still individually mandated by organisational policy to produce research outputs.

The production of research at the individual level becomes further challenged by the fact that meeting teaching commitments is given priority over research production in day-to-day workload planning at the college level. This prioritisation of teaching at the college level results in a lack of college and organisational support for individual staff in their research endeavours. Such support could include facilitating staff to secure sufficient time for research and providing a suitable infrastructure for their research endeavours. Without this, overall research capacity building is diminished.

There are contradictions present at these various levels. Organisational policies that mandate research production are made somewhat ineffectual by policies that restrict opportunities to collaborate and by college level workplace practices that prioritise teaching and thereby limit

college level support that could facilitate and encourage research capacity building for individuals.

8.7.3. College Level

The college level is the most critical level that significantly influences the overall RCB because it serves as a mediator, or intermediary, between the organisational and individual levels. There are various national, organisational, and college objectives that college leaders are trying to meet. This can result in a strategic misalignment because of the difficulty in developing a well-defined research strategy and operational initiatives that are synchronised with the organisational objectives and priorities. For example, these differing priorities can create problems for college leaders in the context of staff recruitment, when thinking about whether to focus on research or teaching skills as a priority for recruitment. It is difficult for college leaders to satisfy all of these different objectives at the same time, which leads to the strategic misalignment. College leaders may unintentionally pay less attention to building research capacity compared to other academic activities that seem to have a more pressing daily priority. Thus, as a result of focussing on the demands of teaching, college leaders often pay less attention to supporting research infrastructure, and providing the requisite funds, infrastructure and workforce. This, in turn, has an effect on RCB, particularly at the individual level in terms of not meeting individuals` expectations for time availability and financial resources for research endeavours.

Furthermore, the absence of research career pathways, with roles such as research assistants, research leaders, and so on, places additional responsibilities on college leaders. This lack of a clear pathway and defined research roles further complicates the task of managing research activities at the college level. When there is a clear structure for teaching roles and career progression but not a defined structure for research roles and career progression, it is difficult for college leaders to know how best to support staff and release resources for RCB.

The absence of effective research leadership that organised, guided, and monitored research activities caused slow progress in developing a robust research infrastructure, research groups, and a mentorship scheme. Consequently, this slow progress hindered academic staff, especially novice researchers, from receiving the necessary mentorship and research training that could facilitate and encourage research capacity. The absence of research leadership at the university and college hinders the embedding of a research culture at the college.

Finally, as a result of the lack of clinical links between colleges and clinical areas, there is an absence idea exchange and an absence of working together to solve patients' problems and nurses' problems in the clinical setting. This absence of formal collaboration between academic and clinical settings also contributes to the low research awareness and engagement among clinical nurses, which also has a subsequent impact on recruitment processes for research studies and capacity building.

8.7.4. Organisational Level

At the organisational level, policy has influenced the research culture and collaboration at the colleges. Academic staff find themselves required to make distinct and conflicting attempts to meet different priorities that are inconsistent at both the college and organisational levels. Therefore, there is uncertainty among individuals about the policies and priorities that they should follow. This is frustrating for individuals and college leaders because it adds complexity to managing their time and funds.

Due to a lack of internal funding for research and a retrospective funding system, the responsibility is placed on individuals, and the universities do not seek to develop or allow for other ways to gain funding, such as external funding. When individuals cannot afford the publishing fee for research papers they might produce from studies, they wait until previous research project funds are given back, which often takes a long time and adds considerably to the burden at the level of the individual. This funding system causes a delay in research paper

production at the individual and college levels, which means that research study findings are not made available in a timely fashion and their potential impact is diminished.

This issue of contradictory policy partly occurs due to the absence of transparent communication between the organisational and college levels. Such communication is necessary to establish policy that is consistent for both levels (college and organisation) and can assist those at the individual level to build research capacity.

The absence of a nursing voice in leadership and strategy roles at a higher level in the organisation compounds these communication problems and further contributes to the inconsistency between research strategic plans and operational plans. Nursing viewpoints are often not being sought out or included in strategic discussions. This was obvious when looking at the membership of the research strategic plan committees at the universities, which includes representatives from most medical and allied health departments but not from nursing. There is then a dearth of knowledge among the members of these committees, and therefore in the strategic policy and operational documents they produce, about nursing research and what is needed to help it develop.

The absence of a nursing voice could be a result of organisational cultures that prioritise medical perspectives over nursing perspectives. This could further be the result of an assumption that nursing education is more skill-based than scientific-based, and therefore the production of nursing knowledge (through research) is less valued and less worthy of consideration. This means that nurses working in academia who seek leadership roles may face challenges as a result of this assumption. Ultimately, university leaders and other senior stakeholders do not promote or adequately communicate the value of nursing knowledge and what nursing research truly needs to progress.

8.7.5. National Level

Issues at the national level have also had a significant impact on RCB in nursing colleges. The absence of formal coordination and collaboration across sectors, such as health and higher education, results in the absence of knowledge exchange, which has further impact on the ability to translate research findings into clinical practice. The absence of a national agency responsible for knowledge exchange (alongside the difficulties in communication between universities and clinical settings noted in the previous section) works as a demotivator for researchers to undertake and disseminate high-quality research, which significantly reduces RCB in nursing.

In addition, the absence of external funding bodies, such as the National Institute for Health and Care Research in the UK and the National Institutes of Health in the US, limits the academic staff's opportunities to undertake research. This absence means that staff and colleges are restricted to applying only for internal funding opportunities, which significantly limits the scope of the research that can be undertaken.

As a result of national policies such as solo research and some university funding regulations, academic staff are indirectly discouraged from collaboration, which increases the culture of individualism among staff at the college level. Therefore, these national regulations also limit the ability of college leaders to promote diversity, equality, and inclusion in research teams.

8.8. Potentials Bias and Researcher`s Influence

As an academic nurse, I acknowledge that my background and experiences may influence how I approach and interpret the data. I have extensive experience as an academic nurse, which allowed me to gain a deep understanding of the factors that may impact RCB within nursing educational institutions. My interpretation of the findings may be influenced by the biases inherent in this experience. For instance, my familiarity with common factors affecting RCB, such as institutional support and limited resources, may have influenced my analysis of the data across multiple cases.

To mitigate this influence, I employed several strategies, including presenting preliminary analysis/findings to my academic supervisors and incorporating any feedback in the ongoing analysis. Triangulation, which involves cross-checking findings, serves as another strategy to ground the interpretations of cross-case findings in the data, not just my own. These strategies could help to minimise the researcher's influence on the results. Nevertheless, I acknowledge that the researcher's influence continues to be a critical component of the cross-case analysis and interpretation.

8.9. Summary of the Ecological Model

As previously stated, the communication channel has influenced the whole RCB and has contributed to the current inconsistency between these levels. This inconsistency is the direct result of the objectives not being unified across all levels. Ranging from the national to the individual, they are disconnected, and each level works separately from other levels. Therefore, the major influence on RCB is the lack of continuous and clear leadership communication about research development at all levels. The present policy implications for RCB are also influenced by the lack of researchers with nursing backgrounds in leadership roles at both the organisational and national levels.

Ineffective research leadership affects individual research capability, college research infrastructure, and organisational collaboration, hindering building research capacity and embedding research culture.

RCB has been significantly impacted by institutional support (at the organisational level), which has also shaped the research culture through institutional policy and funding systems, which have both direct and indirect effects on RCB.

8.10. Chapter Conclusion

Research capacity building was greatly impacted by support and resourcing at multiple levels, including individual, college, organisation, and national levels. Absence of effective

research leadership and infrastructure, time constraints, and an existing culture of competition and individualised work were all suggested as having a negative impact on building research capacity. The university's policies and regulations have shaped the current research culture in the colleges, particularly the policies and regulations relating to promotion and research funding. Finally, current collaboration in nursing research tends to be informally established by individual efforts, and there is generally an absence of formal collaborations and research groups at both the intra-organisational and inter-organisational levels.

9. Discussion Chapter

9.1.Introduction

This chapter presents the overall findings of the study and discusses these findings with reference to the body of literature that exists in the area. The chapter then concludes with a discussion of the study's limitations, implications, and recommendations.

Despite the significant improvements over the past five years, nursing research is still in its infancy in Saudi Arabia. As such, there remains a need to promote nursing research and related productivity across the academic and clinical community in the country (Aboshaiqah et al., 2023). There are few studies that have highlighted barriers hindering individual academic staff from conducting and publishing research in Saudi Arabia. These findings sought to measure research productivity and were based mainly upon quantitative studies. A small number were centred on interviewing academic staff only. However, a more rigorous exploration of RCB in nursing colleges in Saudi Arabia is not fully available, and therefore its rich context is not understood. This is particularly apparent in the wider institutional context. To date, there is no study in the Saudi literature that has explored RCB and understood the barriers, facilitators, and strategies to its development in the wider institutional context.

The main aim of this study is therefore to explore research capacity building in nursing colleges in Saudi Arabia. The study aimed to answer these research questions:

1. What are the barriers and challenges to RCB in nursing educational institutions in Saudi Arabia?
2. What are the facilitators to RCB in nursing educational institutions in Saudi Arabia?
3. What are the strategies and recommendations for policymakers to help the development of RCB in nursing educational institutions in Saudi Arabia?

9.2.Summary of the Findings

The overall finding of the study suggested that research capacity building in Saudi Arabian nursing colleges was greatly impacted by national and organisational policies and support, college leadership and priorities, networking and collaboration, and other social-cultural factors. According to the data, these factors occurred at multiple levels, including individual, college, organisational, and national.

At the individual level, although the academic staff show confidence in conducting research, time constraints and social and cultural factors have contributed to a restricted set of day-to-day research activities and created challenges in conducting high-quality research and producing high quality outputs.

At the college level, the absence of effective research leadership, lack of research infrastructure, inconsistency in the college strategic planning and university priorities, and the culture of individualised work were all highlighted as having a negative impact on building research capacity and productivity. There are currently few formal collaborations or partnerships between academia and practice, which generated a challenge for academics and clinical nurses wishing to work together on collaborative research. Instead, collaboration in nursing research is frequently informal and the result of individual efforts.

At the organisational level, the university's policies and priorities have shaped the current research culture in the colleges, particularly the policies and regulations relating to promotion and research funding. It is noted that these policies had a limited positive impact on the development of research activities and culture.

At the national level, the lack of a clear communication channel between higher education and health sectors contributes to the complexity of knowledge exchange and the ability to apply evidence-based practice (EBP).

A large part of the remainder of this chapter will be organised around the ecological model. This model has become an important part of my work and was also used earlier in the scoping review (Chapter 2) and the cross-case finding (Chapter 8).

9.3.Individual level

9.3.1. Confidence in Conducting Research

The findings show that academic staff generally have confidence in conducting research and are satisfied with their research skills and training, although there is a recognised need for advanced research training. This confidence in conducting research was observed with academic staff who had the opportunity to continue their higher education degree through a scholarship programme that is supported by the institutions. These scholarship programmes, usually undertaken overseas, provide academic staff with protected time, a complete release from administrative and teaching responsibilities, which enables them to gain a higher degree. Confidence in research skills is developed in such circumstances by having qualified academic supervisors and mentors and through interacting with other expert researchers. This finding is aligned with other study findings that confirm the positive impact of 'academic leave' to complete a higher degree, leading to a significant improvement in the proportion of staff holding and/or undertaking PhDs and their subsequent research productivity (Begley et al., 2014). In another study, conducted on Jordanian graduates of UK PhD nursing programmes, the findings show that they have higher confidence levels and greater and a desire for pursuing research in the future (Al-Nawafleh et al., 2013). Worrall-Carter and Snell (2003) reported the opposite findings as the academic researchers are lacking in confidence and knowledge related to research. However, the authors linked this to the difficulty or inability to complete a higher degree, which also supports my finding about the usefulness of scholarship programmes opportunity to obtain a higher degree.

9.3.2. Limited Time Resources

The study findings also indicate that a lack of time for research was common among academic staff. This was generally linked to the heavy workload they were experiencing as a result of other demands placed upon them. The teaching load and administrative burdens contributed to this heavy workload. This was consistent with many study findings that identified time constraints and heavy workloads as significant obstacles to conducting research (Green et al., 2007; B. Green et al., 2007; Torres et al., 2017; Tranmer et al., 2020). Trammer et al. findings suggest that imbalance between teaching and research resulted in the heavy workload and limited time for research (2020). Another study showed that academic staff are spent approximately two-thirds of their time on teaching, which reflects the heavy teaching load in the college (Torres et al., 2017). Authors linked the heavy teaching load to the college`s focus on teaching over research which leads to an absence of college support for dedicated time for research (Torres et al., 2017). This aligned with my finding which indicated that academic hours and workloads are formally distributed for teaching and administrative tasks but not for research.

Green et al. (2007) also argued that this inequitable distribution of workload has contributed to a high teaching load, which limits research time. The study emphasises the need to involve research in workload calculations and to delineate and value both teaching and research time. The data in this study suggests that the specific allocation of time for research could be used as a strategy to help staff manage time and provide them with the environment and mental space necessary for conducting research. It was reported as a useful strategy, even though it was not often supported by the institutions. A previous case study mentioned this strategy of specifying time/days for research, which was implemented in the nursing college. The college specified a day for scholarly activities, but it was not effective because research usually requires continuous and focused work. In addition, there is frequently a challenge in

protecting this specified time due to other upcoming responsibilities and competing priorities (Green et al., 2007).

9.3.3. Social and Cultural Factors

The study's findings imply that social and cultural factors, such as language and gender barriers, have had an impact on research capacity at the individual level. This finding is consistent with a previous study conducted in Saudi Arabia, which stated that language differences are a challenge for academic nurses who are non-Arabic speakers. The challenge mostly occurs during qualitative data collection phases where methods such as semi-structured interviews might be employed (Alotaibi, 2023).

Alotaibi's findings also indicate that the gender differences are a barrier to conducting high-quality research because it has an impact on participant recruitment, particularly when male investigators are attempting to recruit female participants. The author linked this to Saudi culture, which usually forbids males from conversing directly with females, and vice versa, except in cases of necessity (Alotaibi, 2023).

My study suggests similar findings regarding the impact of gender differences on RCB. However, this impact of gender difference was slightly different from the findings in Alotaibi (2023), as the participants in my study reported the gender difference as a barrier to networking and collaboration. My findings suggest that female academic staff also experience greater family commitment expectations than male academic staff, particularly in relation to childcare. These additional family responsibility demands could partly explain the low research productivity among female academic staff in medical and health schools in Saudi Arabia (Alghanim & Alhamali, 2011).

9.3.4. Summary of the individual: Intersectionality in RCB

Despite the confidence and skill acquisition noted by participants, the limitations of time, workload, culture, language and gender have prevented RCB to flourish within nursing

colleges in my study. It is noted later in this chapter that many of these restrictions come about because of wider institutional demands. But particular groups (international staff and women) are at greater risk of being disadvantaged by these constraints. This has led to me to see that some groups are experiencing additional detrimental conditions at the intersection of gender and ethnicity. Policy makers and institutional leaders are required to consider the additional demands placed upon these academic staff when developing responses to these challenges.

9.4.College Level:

9.4.1. Research Strategic Misalignment

The findings suggest that RCB is negatively impacted by strategic misalignment. The misalignment results from the challenge of developing a well-defined research strategy and operational initiatives that are in sync with each other and the wider organisational objectives and priorities.

A study in the Middle East reported similar findings concerning the misalignment between the organisational vision and the strategic plan of the college. The authors stated that many nursing departments do not emphasise research, even though it is a university vision priority (Al-Nawafleh et al., 2013).

In a case study finding in the UK, the broader organisational and political contexts have been shown to significantly impact college strategies and can lead to impractical and contradictory expectations (Green et al., 2006). The higher education sector often sets standards for short-term outcomes of research (Green et al., 2006), while research capacity building is a complicated process that requires an extensive period of time and long-term goals (Segrott et al., 2006).

In another study in the USA context, a nursing college experienced a misalignment where their strategic plan was not in sync with the wider university mission that was strongly

focused on research. The misalignment in the strategic plan was a result of the college having a strong focus on teaching to meet the State demands for nurses. As a result, research productivity in the college significantly diminished (Andrews et al., 2019).

The findings of my study have also provided a reason for misalignment and the lack of a well-defined research strategy, which were linked to the absence of academic leaders. This finding aligned with a study that found a relationship between the absence of strong academic leadership and the lack of clarity in addressing research in the institutional strategic plan (Segrott et al., 2006). Absence of leadership is discussed intensively in the next section.

9.4.2. Absence of Research Leadership

The findings also suggest that the issue of the absence of effective research leadership and leaders has greatly impacted RCB. The results of the study indicated a significant pattern centred on an absence of research leaders at the college level. This is partly a result of recruitments criteria when hiring new academic staff. Recruitment criteria do not emphasise the importance of and requirement for research career pathways and do not seek to target expert researchers. As a result of failing to emphasise research careers and target expert researchers and leaders, RCB as a whole has been affected.

These above findings are consistent with the previous studies, which stated that the absence of academic leadership and research leaders tends to inhibit the continued development of research capacity (Andrews et al., 2019; Crookes & Bradshaw, 2002; Green et al., 2007; B. Green et al., 2007).

Andrews et al. (2019) suggested that creating a leadership team who is capable of establishing a shared mission for the research enterprise has been crucial to building research capacity. The study reported some advantages of employing a new research leader with a strong track record of NIH funding (National Institutes of Health, USA) to aid in directing the

research mission, mentoring novice faculty staff, and building the research infrastructure (Andrews et al., 2019).

Another study in the UK context highlighted how recruiting expert researchers who have a track record in research helped in developing research activities at the college (Crookes & Bradshaw, 2002). Those expert staff members contributed significantly to the college's research training and mentorship.

9.4.3. Research Infrastructure and Mentorship

The finding suggests that building an appropriate research infrastructure and developing research mentoring schemes are necessary in order to provide sufficient support for research and researchers. This is in line with previous studies that stated the importance of research infrastructure in building RCB (Andrews et al., 2019) and the positive impact of mentoring schemes on both research capacity development (Jo Cooke, Gardois, & Booth, 2018) and research career advancement (Farquharson, 2023; Hafsteinsdóttir, van der Zwaag, & Schuurmans, 2017).

According to this study findings, the absence of a mentoring scheme at the college primarily affects new academic staff and novice researchers. This finding is consistent with a previous study that indicated the importance of mentoring for junior staff (Farquharson, 2023). Farquharson (2023) revealed that mentorship plays a crucial role in assisting novice nurse researchers to develop their research skills and to become research leaders.

A study by Andrews et al. (2019) reiterates this point and suggests that a lack of access to mentorship negatively affected research endeavours among junior academic staff. The authors connected the lack of a mentoring programme to the limited availability of senior academic and experienced staff at the college level. To cover this issue, the college then targeted senior staff and academic leaders in their recruitment strategy, and implementing this

strategy showed a significant impact on improving their mentoring scheme and overall improvement in RCB at the college (Andrews et al., 2019).

9.4.4. Prioritisation (Teaching over research)

Both case studies in this study prioritised teaching activities above research. The contextual reasons for this relate to the operational demands of preparing a nursing workforce, especially at a time when the demands of healthcare systems to train nurses are high. These identified results are consistent with the findings of other studies that show competing teaching and research priorities. In the USA context, a study suggests that the college has transformed its mission to prioritise teaching in response to the state-wide need for more advanced practice nurses (Andrews et al., 2019).

Another review conducted by Segrott et al. (2006) indicates that prioritising research plays a crucial role in RCB, and this could affect RCB when teaching is seen as the most important aspect among other academic activities.

The finding also indicates that prioritising teaching over research implies that academic staff become individually responsible for building their own research capacity. In this way, nurse academics are forced to develop their own scholarly work outside of the formal working week.

This identified finding about the impact of prioritising teaching on RCB was aligned with a case study conducted in a nursing school (Green et al., 2007). When the teaching at the school was core work, research activities became a matter of individual or personal choice rather than an embedded part of their academic activity.

The study finding indicated that the interface between research and teaching was a challenge for college leaders. College leaders find it difficult to meet these two priorities (teaching and research) and to align support and resources for both of them at the same time.

The same challenge of meeting two priorities was reported in a comparison case studies in the UK, where the first study site focused on promoting research to meet RAE (Research Assessment Exercise in the UK), but this focus on research unintentionally devalued teaching. However, the second study site, which focused on teaching, had unintentionally devalued research (Green et al., 2007).

9.4.5. Summary: Nursing Academic- Caught Between Two Worlds

Nursing colleges in Saudi Arabia, face huge demands. On the one hand colleges are the mainstay for professional nurse preparation. At a time when the nursing workforce across the globe is facing demands, SA nursing colleges are also working hard to prepare highly skilled nursing professionals fit for the 21st Century. But nursing colleges also now sit within a wider university culture, where research and scientific endeavour is also important. There is evidence in my study that nursing colleges are caught in a space between these two worlds, healthcare and science. At present, and despite value statements to the contrary, nursing colleges appear more focused on the former to the detriment of RCB. This has resulted in a failure to develop the culture and infrastructure required to allow research to flourish. An absence of investment in research leaders, low levels of mentorship and the marginalisation of research activity is the result.

9.5.Organisational level:

9.5.1. Organisational Policy and Regulations

The findings suggest that the institutional policy and promotion regulations have shaped the current research culture at the nursing colleges, which hinders the successful implementation of the current strategic plans at the college.

This finding is consistent with those of a Saudi study, which indicates that nursing organisations, healthcare facilities, and universities must work together to establish a policy that will enhance the culture of nursing research (Aboshaiqah et al., 2023).

9.5.2. Funding Source

Another important finding was that internal funding has impacted research capacity building because of its limitations and a retrospective payments system. This finding is supported by similar findings in a study conducted in a Saudi context, which reported that lack of funding was one of the barriers that nursing faculty members encountered when trying to conduct research (Alotaibi, 2023).

The finding indicated that researchers are solely depending on internal funding. The lack of external funding could explain the current scarcity of research funding sources. This is aligned with previous findings suggesting that the provision of external funds will eventually increase the availability of internal funds (Connolly, 1997). In the United States (U.S.), a study shows the vital role of external funding in supporting nursing research in nursing schools (Schnall, 2020). The author reported that between 2014 to 2018, the external funders sponsored half of the total research at U.S. nursing schools. Another study also suggests that seeking external funding and encouraging staff to submit external fund applications, were reported as useful strategies for RCB because they showed a significant improvement in the college`s annual total funds and increases in research outputs in a nursing college in Ireland (Begley et al., 2014).

However, in the Saudi context, in the last two years, there has been a recent emphasis on providing funding opportunities for researchers in the medical and health fields to align with the Saudi vision 2030 transformation program. In mid-2021, the government has established RDIA (Research Development and Innovation Authority) to support research in four focused areas, including health and wellness. This initiative, in future, could provide an extra opportunity for nursing academics to seek funding outside their organisation.

9.5.3. Summary: Disparity between mission and operations

The SA university system explicitly promotes the importance of research across a range of academic fields and disciplines, nursing is no different in this respect. However, the case studies demonstrate that organisational mission statements and strategies are somewhat at odds with the operational experience. This is particularly true of funding and the individual responsibility attached to this. The impediments noted in my findings point to a system that is contradictory and misaligned. The absence of structures that support the funding of research only add to the burden felt by the individual. This adds to those experiences of lack of prioritisation experienced more acutely by the nursing profession relative to others.

9.6.National level:

9.6.1. Cross-Sectoral Collaboration

The findings show that current collaboration and communication are seen as individual efforts and that there is generally an absence of cross-sectoral collaboration and communication, which results in a gap between academia and practice and difficulty accessing hospitals for data collection and participant recruitment. This finding is supported by the Saudi study findings, which suggested that uncooperative facilities (such as hospitals) hindered nursing academic staff from conducting research in a clinical setting (Alotaibi, 2023). Another study suggested that collaboration amongst legislative authorities, regulatory agencies, clinical settings, and universities might facilitate the creation of a policy that enhances the nursing research culture and promotes nurse participation in research (Aboshaiqah et al., 2023).

9.6.2. The Nursing Voice in SA

The findings of this study show that the absence of a nursing voice at a higher level in organisational and national contexts has affected RCB. This absence of a nursing voice could be explained by the findings of a previous study by Alluhidan, Tashkandi, et al. (2020). This author suggested that the nursing profession in Saudi Arabia is still seen as being inherently

about care rather than being a science-based endeavour. The author highlighted that the independence of the nursing profession is not yet achieved, as most current national nursing associations report to a physician who makes the final decision on nursing issues or initiatives. Another finding, from a review conducted by Segrott et al. (2006), mentioned that nursing research was assessed and evaluated in the UK national RAE (research assessment exercise) under non-nursing units of assessment. The absence of a clear nursing voice within these structures means that the problems and challenges faced by the profession, with regards to RCB, are not known. As such policy and funding developments cannot take account of these problems and address them in a meaningful way. It also means that research agendas are more likely to be formed around medical questions as opposed to those driven by the nursing profession.

9.6.3. Knowledge Exchange and Implementing EBP

The findings suggest that the absence of a nursing voice has also affected knowledge exchange and applying EBP. One of the main factors that affects RCB is the lack of readiness to change practice and apply EBP, which links to national and organisational barriers. This finding is in line with other study findings that examined barriers to implementing EBP in nursing practices which indicate that a major barrier to implementing EBP is the lack of authority to change practices (Omer, 2012; Pitsillidou, Roupa, Farmakas, & Noula, 2021; Williams, Perillo, & Brown, 2015).

Williams et al. (2015) linked the challenge of applying EBP to the low level of autonomy and authority among nurses to make changes to their practice that could positively influence patient outcomes. Furthermore, they suggest that other healthcare providers at higher levels of the professional hierarchy do not value the views of nurses on patient care, again limiting their confidence and authority to apply EBP.

In Saudi literature, while nurses in Saudi Arabia have positive attitudes towards EBP (Alqahtani et al., 2022), there is a lack of nursing leadership commitment to implement EBP (Mohamed, Alhujaily, Ahmed, Nouh, & Almowafy, 2024).

Findings from my study also showed that there was a challenge in applying EBP, and this could be linked to the absence of national agencies that supervise and support research at the national level. Fortunately, recently, in August 2023, the Saudi Council of Ministers (the Supreme Council of Government in the Kingdom of Saudi Arabia) made the decision to establish the Saudi National Institute for Health Research (Saudi NIH), which has a leadership role in supervising clinical trials and translational research in Saudi Arabia by providing support for them, enhancing the surrounding environment, and adding value to the research (Saudi-NIH, n.d).

The Saudi NIH commits to facilitating the transformation of research findings and knowledge into a positive impact on health in SA. Currently, however, there is no clear image of how the institute will support the translation of research findings into practice, particularly in nursing research.

9.6.4. Summary: Power and the Marginalised Profession

My study has indicated that the nursing profession is disadvantaged at a national level in two ways. The dominant voice within the healthcare policymaking agenda remains that of the medical profession. This is institutionalised through a lack of professional autonomy for nurses and has huge implications for funding and policy decision making. Furthermore, the transition to a university-based organisation appears to have impeded natural relationships with the clinical environment, further hampering natural allegiances and networks to inspire research ideas and drive EBP and implementation. Rycroft-Malone (2004) points to three important factors that are important to the implementation of evidence in practice: context, facilitation and sound evidence. At present the situation in SA is hampered by sound nursing

evidence as a result of inhibited RCB. The absence of close networks between the university and healthcare environments also mean that the facilitation element of the model is also missing. Recent moves by the SA Government mean that some new infrastructure might help in some of these respects.

9.7. Study Contribution to Knowledge

The findings of this study are important in the context of building nursing research capacity in the academic setting in Saudi Arabia. To the best of my knowledge, this study is the first qualitative study to explore RCB within nursing colleges in the Saudi Arabian context, including the wider institutional context. Using an ecological model in this study allowed me to investigate and explore RCB at multiple levels, including individual, college, organisational, and national. The multiple-case study approach, which includes three data sources, has provided rich data to gain insight into the issue and explore RCB in its broader context. My contribution to knowledge is summarised below:

1. The study has highlighted a range of factors that inhibit and facilitate RCB in nursing colleges in SA. These factors relate to work loading, prioritisation, misalignment of policy and practice as well as those that point to power and disadvantage of the profession itself and those who work within nursing academic environments. The notion of intersectionality is of particular importance given the predominance of an ethnically diverse female workforce.
2. The study represents an opportunity to explore these issues with the use of an ecological model. The use of such a model highlights the interconnectedness of the individual with the national, via college and organisational level factors. To the best of my knowledge, this has not been achieved before in a nursing RCB context in SA.
3. To the best of my knowledge, a case study methodology has not been used in an RCB study of SA nursing academics. Its use has delivered a unique view of the question of

RCB in SA and helped to shed light on individual experience alongside institutional context. The inclusion of non-nurses in such a study is also novel.

The findings of the study contribute to knowledge by providing a better understanding of the current barriers, facilitators, and strategies for the development of RCB within nursing colleges in Saudi Arabia. The findings of the study will directly help individual academic staff, college leaders, and policymakers to develop nursing research capacity building. The study also provided strategies and recommendations to build research capacity at multiple levels: individual, college, organisational, and national.

9.8. Strengths and Limitations of the study

9.8.1. Strengths

To the best of my knowledge, this study is the first qualitative study that has set out to explore RCB within nursing colleges in the Saudi Arabian context. The use of a case study approach is one of the most significant strengths of this study. To the best of my knowledge, a case study methodology has not been used in a RCB study of Saudi Arabian nursing academics. The multiple-case study approach, which includes three different data sources, has provided rich data to gain insight into the issue in order to explore RCB in its broader context.

In addition, using an ecological model in this study has allowed me to investigate and explore RCB at multiple levels, including individual, college, organisational, and national. The use of such a model highlights the interconnectedness of the individual with the national via college and organisational level factors. To my knowledge, this has not been accomplished before in a nursing setting in SA. Using a case study approach and the ecological model has provided a distinct perspective on the issue of RCB in SA and highlighted individual experiences within the institutional context. The inclusion of non-nurses in such a study is also novel.

9.8.2. Limitations

Although qualitative case studies provide deep, comprehensive insights into specific phenomena, they are accompanied by substantial methodological constraints and potential biases that may influence the study's findings.

The lack of generalisability is one of the most significant limitations of qualitative case studies. The results of case studies are not readily applicable to more diverse and large populations or contexts due to their tendency to concentrate on a single or limited number of instances (cases). This study was originally planned to include three to four case studies. Due to time limitations, the data collection was confined to only two nursing colleges. These two case studies may not be fully representative of the situation in nursing colleges and departments in Saudi Arabia. This may limit the generalisation of the finding and impact its transferability to other contexts.

However, the study provided a rich and detailed description of the study settings to help the reader understand the two different case studies. Furthermore, the triangulation of three distinct data sources (documentary analysis, interviews, and observational memos) has yielded thick data, which helps in the interpretation and investigation of RCB and helps in understanding how these factors influence the development of the RCB within Saudi Arabian nursing colleges. Additionally, this limitation was also balanced by triangulation of the three levels of interview data, including individual (academic staff), college level (college leaders), and organisational level (stakeholders at higher-level role).

Another limitation in this study was the missing observational field from the data collection methods. The study was initially designed to carry out observational field notes at the study sites. As a result of COVID pandemic restrictions, the ethical committee recommended excluding field observations from the data collection method. Alternatively, the study incorporated observational memos obtained through the process of data collection and

analysis. This observational memo has supplied further data that contributes to a greater understanding of the issues. Furthermore, the initial design included an additional type of interview participant, a stakeholder in a higher-level role, to gather supplementary data and facilitate a more comprehensive understanding of the problem from different perspectives.

In this study, researcher positionality played a crucial role in shaping various stages of the research process, including the formulation of research questions, data collection, analysis, and interpretation. My nursing background and my experience as an academic nurse for over five years may bring some initial thoughts and beliefs about factors affecting RCB in nursing colleges in SA. These preconcepts and expectations could influence the data collection, observation, data analysis, and interpretation of findings. I may consciously or unconsciously select, interpret, and retain data that confirms my preexisting beliefs, leading to researcher biases.

Therefore, throughout the research process, I employed many strategies to minimise researcher positionality and potential biases. First, I have engaged in ongoing reflexivity, continuously reflecting on my perspectives, assumptions, and reactions to the data. This process has allowed me to remain open-minded and receptive to alternative viewpoints that may challenge my initial assumptions. Second, I aimed at enhancing the transferability and dependability by providing a thick description of the case (context details, size, etc.) and the rationale for selected approaches and methods for data collection and analysis. Another strategy included triangulating the data sources, both within-case and cross-case, to cross-check findings, which can help reduce biases.

Additionally, I engaged in a discussion with my academic supervisors to prevent my positionality from influencing the data collection or analysis process. For instance, since my experience as an academic nurse may shape the interview topic guide, a discussion with supervisors about the interview topic guide helped to ensure that the questions did not just

reflect my personal experience and preconceived assumptions. Similarly, during data analysis, the discussion with my academic supervisors enabled the consideration of new insights and improved the ability to identify relevant issues in the data, link them to a developed theme, or add a new theme to the analysis.

This study intended to establish trustworthiness by fulfilling credibility, transferability dependability, and confirmability throughout the study design and implementation and this was described in full in the methodology chapter (chapter 3). While it is impossible to completely eliminate the researcher's influence, these strategies could aid in reducing its impact on the research finding.

9.8.3. Future Study

The study explored RCB exclusively within nursing educational settings in Saudi Arabia. The findings suggest that RCB is heavily affected by factors associated with clinical settings, such as collaboration and research awareness toward research among clinical nurses. Since this study exclusively focused on academic context, further investigation is needed to comprehend the challenges and barriers that clinical nurses and nursing leaders encounter to building research capacity in clinical settings in the SA context.

Case study methodology is appropriate for studying RCB, taking into account employing four to five cases to provide a better understanding of the phenomena. Future studies should also involve stakeholders at the national level to deeply investigate the factors affecting RCB nationally.

9.9.Implications

This multiple-case study offers a unique insight into research capacity building in nursing colleges in the Saudi context. The findings of this study provided new evidence about the barriers, facilitators, and strategies that influence the development of RCB at national, organisational, college, and individual levels.

The findings of this study could help leaders at the Ministry of Health and Higher Education to understand the national and organisational factors that impact nursing research and collaboration nationally. The findings also provide a deep understanding of the effects of organisational policy on research culture, which can help university leaders and policymakers embed a positive research culture in the institutions. The findings disclosed a wide range of factors and issues that influence research capacity, which could help nursing college leaders develop RCB. Understanding the individual factors at play in building research capacity could also help academic staff overcome these identified barriers and facilitate RCB by implementing the recognised strategies and recommendations.

9.10. Study Recommendation

The findings of this study are derived from two separate case studies that were conducted with the aim of exploring the RCB on multiple different levels. The recommendations will therefore be made based on these levels to present them most effectively.

9.10.1. At the National Level:

- The nursing voice should be raised at the national level in order to support nursing research nationally. Nursing policymakers and leaders need to be empowered to make decisions and authorised to translate EBP into practice within clinical settings. The Saudi NIH (Saudi National Institute of Health) should involve nursing policymakers, leaders, and expert researchers in relevant committees to facilitate incorporating the nursing viewpoints at the national level. Furthermore, NIH should establish a

dedicated research unit to facilitate the translation of nursing research into practice and address clinical needs.

- There is a need to embed the culture of external funding and develop related policies and regulations. External funding will provide an extra opportunity to fund research projects and decrease the demand for internal funding. The higher education sector should first develop a policy framework that allows seeking external funding through a broad range of funding mechanisms, such as charities, non-profit organisations, and the government and private sectors. After developing such a policy, universities and educational institutions need to support their staff by providing courses and training on how to successfully identify and apply for external funds.

9.10.2. At the Organisational Level

- There is an urgent need to revise some policies, particularly the promotion policy and the funding system. Universities should adjust the criteria for solo research in the promotion policy. To do this, the universities should first assess the current solo research criteria, the reasons for its existence in the promotion policy, and its impact on research collaboration. Subsequently, universities should modify evaluation criteria to ensure that collaborative research is treated equally with solo research.
- Nursing leaders should be involved in leadership and strategy roles at the organisational level. Universities should foster a culture of involving nursing academic leaders in the formulation of university policies and research strategic plans at the organisational level. This could include integrating expert academic nurses into existing committees, particularly those related to health disciplines and research. Fostering a culture of involving nursing leaders could facilitate incorporating the nursing viewpoints into broader university initiatives.

9.10.3. At the College Level:

- The concept of research leadership should be embedded in the Saudi nursing colleges. There is an urgent need to focus on developing research leadership that guides and monitors research activities at the nursing colleges. To develop strong research leadership, college leaders should first improve job recruitment criteria by target research experts and leaders to effectively lead research activities and develop and maintain a sustainable research capacity building at the college. Second, nursing college leaders should create a clear vision and strategic plan for research and identify research priorities that align with both national and organisational visions, as well as the healthcare needs. Addressing research leadership should also include:
    - Creating a supportive research infrastructure that is available and fully established.
    - developing a mentoring scheme and advanced research training that targets academic staff, particularly novice researchers, to provide them with needed research support in the research process and fund.
- There is an urgent need to build research collaboration within and across disciplines. Academic nurse leaders and clinical leaders in the clinical setting should build research collaboration by creating a well-defined strategic plan and effective and open communication. Leaders from both institutions and organisations should develop clear goals and shared visions that highlight common goals and research agendas addressing critical challenges in clinical practice and nursing education. The nursing college and the clinical setting should write a formal agreement that outlines roles, duties, objectives, timelines, and resource allocation. Leaders should establish dedicated research units or liaisons within clinical settings that focus on translating research into practice and addressing clinical needs.

9.10.4. At the Individual Level:

- Individual academic staff should align their research interests with the college and university objectives.
- Individual academic staff should enhance their research skills by attending research workshops, advanced courses, training, and conferences.
- Individual academic staff should partner with experienced researchers or mentors who can provide guidance and support.

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Appendices

Appendix A. Search Term

PubMed Database: Identified articles (N=112)

("faculty, nursing/education"[MeSH Terms] OR "faculty, nursing/organization and administration"[MeSH Terms] OR ("schools, nursing/education"[MeSH Terms] OR "schools, nursing/organization and administration"[MeSH Terms]) OR ("higher education"[Title/Abstract] OR "universit*"[Title/Abstract] OR "college*"[Title/Abstract] OR "facult*"[Title/Abstract] OR "academi*"[Title/Abstract] OR "school"[Title/Abstract])) AND "nurs*"[Title/Abstract] AND ("research capacity"[Title/Abstract] OR "research culture"[Title/Abstract]) Filters: From 1995/1/1 to 2020/9/1

Scopus Database: (Identified articles N=57)

(TITLE-ABS-KEY ("research capacity") OR TITLE-ABS-KEY ("research culture") AND TITLE-ABS KEY (higher AND education OR universit* OR college* OR facult* OR academi* OR school) AND TITLE-ABS-KEY ("nurs*")) AND PUBYEAR > 1994 AND PUBYEAR < 2021

Medline Database: Identified articles (N=128)

TS="research capacity" OR TS="research culture" **AND** MH=(Faculty, Nursing/organization & administration OR Faculty, Nursing/education OR Schools, Nursing/organization & administration) OR TS=higher education OR TS=universit* OR TS=college* OR TS=facult* OR TS=academi* OR TS=school AND TS=nurs* **Timespan:** 1995-2020.

CHINAL Database EBESCO: Identified articles (N=262)

Print Search History: EBSCOhost 11/11/2020, 20:01

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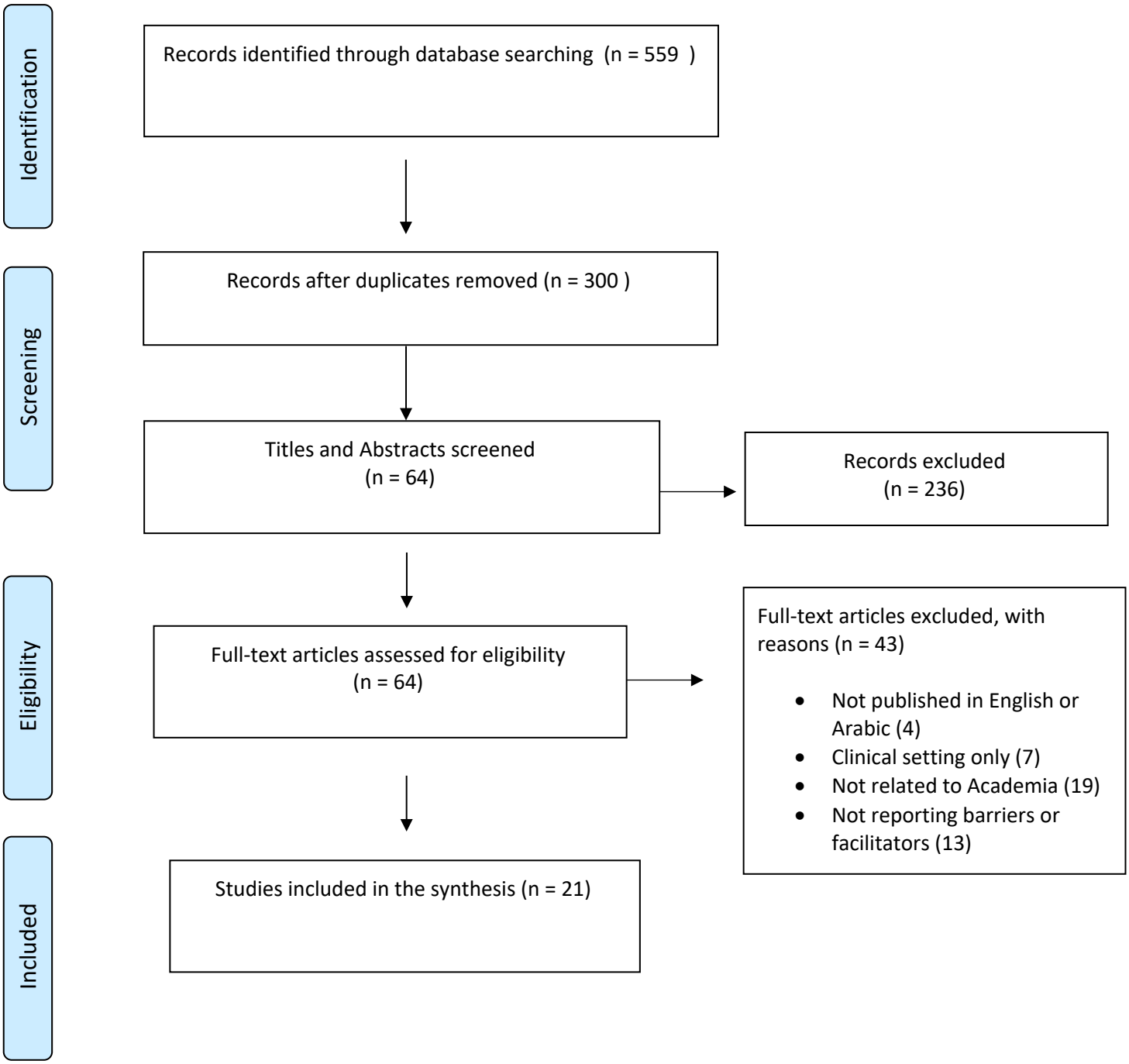
Wednesday, November 11, 2020 3:00:20 PM

#	Query	Limiters/Expanders	Last Run Via	Results
S6	S1 AND S2 AND S5	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	262
S5	S3 OR S4	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	532,806
S4	higher education OR universit* OR college* OR facult* OR academi* OR school	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	532,806
S3	(MM "Schools, Nursing/AM/OG/ED") OR (MM "Faculty, Nursing/AM/ED/OG")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	895
S2	nurs*	Limiters - Published Date: 19950101-20201231 Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	784,396
S1	research capacity OR research culture	Limiters - Published Date: 19950101-20201231 Expanders - Apply equivalent subjects	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL	3,883

Appendix B. Flow diagram for study selection 'PRISMA'



Appendix C. Charting the Data

Authors & Year	Setting & context	Aim	Study design	Participant	Main finding	Limitations/ future research/ comment
Ahmed Al-Nawafleh , et al , 2013	Academic nursing, **Jordan**	(i) to explore how doctoral nursing graduates subsequently utilize their research skills; and (ii) to explore the barriers or facilitating factors that enable them to continue being productive research once they return home.	an exploratory qualitative design, Using: Interview	16 graduates who worked in the nursing faculty	The continued development of a research career depended upon three interrelated elements: **1-confidence and individual motivation:** Doctoral training process had given them a broad range of skills that would support ongoing research and had raised their expectations for continuing with their research. Organizational support may help an individual to reignite their enthusiasm for research. However, all of the participants described a wide **2-Access to mentorship and support** **3- The organizational and institutional context.** **Barriers/challenges** • lacked such personal mentorship. • lack of time, lack of resources, and lack of institutional support for research was mentioned by all the participants • variety of challenges in obtaining the support they needed to continue with their research careers – regardless of their level of motivation. • Heavy teaching and/or administrative commitments posed a serious barrier to finding time for research. • Institutions had research regulations in place but lacked a clear policy for specifying the research duties of the academic staff. • Shortage of academic staff lead to the pressure on staff and created disincentives to do research. • Taking extra hours for teaching is rewarded financially, however, additional time spent on research is not rewarded unless it results in a publication and even then the reward may come (as a promotion) only after several years. • External social and family pressures for many of our sample (particularly the women), preventing them from spending any extra time on research. The promotion system in Jordanian universities also influenced the research productivity of our participants.	**Limitation:** This study focused on the experience of UK doctoral nursing graduates in Jordan. It did not explore the perspective of university officials, academic nurse leaders (or other doctoral graduates)
Andrews, J. O., et al. (2019).	nursing Academia, **USA**	To describe how a college is rebuilding the research enterprise to meet the established research mission after a decade of marginal research productivity.	Evaluation studies "Descriptive" using Multi-levels approach **Data** *are collected on a variety of outcomes from college and university databases. - (Microsoft Access grant database.*	Not applicable	- **Implemented strategies at 3 levels:** ***University level Strategies:*** 1-Brokered opportunities and partnerships. 2-existing resources 3--Faculty development and networking forums. ***College level Strategies:*** 1-Defined research emphasis Leadership 2-recurtment and selection 3-Infrastracture: Structured faculty mentoring. plan, Structured internal and external reviews and mock reviews 4-Faculty development: (Visiting scholars, Scholarly writing clubs, "Research Exchange" and interest groups, Support for travel to national conferences/meet with external mentors). 5-Incentives. 6-culture and climate: (Role modelling and reinforcing work habits, Sharing successes in weekly internal email communications, social media, and external, monthly newsletter, Creating and maintaining a shared vision). ***Individual Level Strategies:*** 1-Qualified and well-trained faculty. 2-Commitment/motivation 3-Work habits (Mentoring for best results in personal productivity) 4-Engagement/ socialization (Engage within college, university, and research networks externally, **Strategies' impact:** a significant growth in all areas of the mission (e.g., teaching, research, practice, and service). **Challenges:** The recruitment of junior faculty with high potential to become successful nurse scientists will be partially affected by the quality of training that current nurse PhD programs provide both in the depth and breadth of exposure to research methodologies, research experience that encompasses more than the completion of a dissertation, data analyses skills and preparation for grant writing. - Scarce funds at the national level is a challenge. - Pressure for undergraduate education to meet workforce needs.	Additional research is needed on the processes, delivery, and quality of PhD programs to fully inform our future paths.

Begley, et al, 2014	academic nursing **Ireland**	This paper maps an exemplar of successful RCB in one School of Nursing and Midwifery in Ireland, Trinity College Dublin, through its research outputs over a ten- year timeframe.	Descriptive study "Evaluative"	Not applicable	-New challenges were that nurse and midwife tutors had to adapt to a less teaching-focussed and more research-driven working life. In traditional schools of nursing/midwifery, they would not have been expected to conduct research. - Double-teaching the Diploma in Nursing and the new BSc in Nursing at the same time, sometimes in the original schools of nursing due to lack of accommodation in the university. - Introductory courses were provided on the academic's role, time management and introduction to research opportunities. - The preparation phase had thus been completed and solid structures had been set in place upon which new developments could be built. **Implemented strategies:** • 'academic leave', 'student stipends' and 'reduced teaching load': would reduce barriers to participation. • 'research maintenance funding' and 'inviting junior staff members onto research teams'): enable collaboration and networking. • 'Visiting Professors' and 'inviting junior staff members onto research teams': provide facilities for mentoring. • 'Visiting Professors', 'senior appointments', 'inviting junior staff members onto research teams' and 'improving the research culture' **Strategies' impact:** • staff would hold, or be undertaking, a PhD. In 2010, out of 66 academic staff, 52 either held (n = 23) or were undertaking (n = 29) a PhD (79%), thus surpassing the goal ,In 2012, 38 staff now hold a PhD (55%) and a further 17 (25%) are undertaking one (55 out of 69, 80%), so this trend is continuing. • increase the level of funded research by 20% per year from 2005 to 2010. In 2004, "570,000 of research funding was received. Overg the 5-year period a 20% increase each year should have amounted to a total of "5,090,054. The actual achieved was "6,351,101, equivalent to 28% increase each year, thus surpassing goal 2. • increase peer-reviewed publications and conference presentations by staff, and the total number of publications. The actual numbers achieved were 439 publications (27% increase) and 512 presentations (20% increase each year).	
Cooke & Green, 2000	Academic nursng, **UK**	To identify those factors which might affect the research capacity of departments of nursing based in higher educa-tion, and to make recommenda tions based upon the fndings to enable departments to develop their capacity to undertake research.	literature review	not applicable	Result: factors affecting research capacity development are numerous and complex. This is NOT something which can only take place at a departmental level as there are issues which require consideration nationally, as well as factors which depend upon the individual academic member of staff. **FACTORS AFFECTING RESEARCH CAPACITY:** 1- Academic qualifications. 2- Research skills. 3- Time available for research: time is a significant factor affecting research productivity. nurse educators require designated time to enable them to undertake research. in a range of disciplines, teaching and administrative duties `are considered distractions from the research enterprise' but `do not necessarily reduce research output in all cases'. 4- Motivation to undertake research: motivation is a more `critical element' in staff development than research skills because `those who are motivated will seek learning opportunities and so develop skills'. -Assessing what proportion of staff should be designated as `active researchers' within a department and capitalizing on existing research expertise and output. 5- Focusing resources only on those with an expressed or proven interest in research. Some organizations have adopted a *holistic approach* to staff development. 6- A culture of research: the larger, longer-established departments based in research-strong `old' universities' had more research-active staff and achieved the highest ratings. In contrast, nursing departments assigned the lowest ratings were small and recently established in `new' universities. -nursing departments with a research-orientated culture are more productive. **Factors identified as enabling nurses to undertake research** • Institutional culture, while inhibiting factors include a lack of leadership, strategy or direction, and a `lack of research mindedness', more productive nursing departments are distinguished by the allocation of funds to develop research, and research as a visible unit of the *organizational structure*. This evidence therefore suggests the need for a continued culture change in departments of nursing towards a research-orientation. *Culture change* is complex and many, if not all, of the factors discussed elsewhere in this article relate to this issue.	

					Developing a research culture in academic departments of nursing is particularly complex because nurse education is fundamentally different to other academic disciplines. • Subject specialization: nursing department considers `specializing in a limited number of research fields in which it can clearly establish excellence'. Delphi technique was used to reach a consensus of opinion among staff about prioritized areas for research. • Research Subject: gap between theory and practice, underlining the need to improve relationships with clinical staff. Developing links between practice and academia is mutually beneficial as academics are offered insight into areas of practice requiring research, as well as access. Such a partnership could also facilitate the dissemination of research findings into practice, ultimately resulting in improved patient care. • Research Quality: reasons for the low results achieved in the 1996 RAE by nursing include: the quality of the research being undertaken; the research not being considered of international standing; and the journals in nursing not being rated highly. -The need for departments to develop a publishing strategy which ensures research findings are published in the most highly rated journals. • Research Council: lack of research history in British nursing means that nursing academics are competing for funding with more experienced academics with a potentially lengthy track record from other disciplines.	
Davis & Boland, 2019	Academic /Practice-Clinical USA	This article adds to the emerging literature on models of academic-practice partnership to develop nursing research.	Evaluation studies "description of Partnership Project"	Nursing faculty member & Clinical Nurses	**operational process:** The first phase of our model partnered staff nurses and SONDH faculty members with mutual research or evidence-based practice interests. **Outcomes** The benefits to each organization are significant as the projects address quality patient care priorities at QHS. From the outset, the goals have been to develop nursing research capacity. The partnership has provided opportunity for SONDH faculty to develop and conduct clinical research, deepen the academic- practice relationship, and support expert clinicians to expand their practice. The faculty also benefitted as they had opportunities to learn new research designs & methods, collaborate with clinicians, stay current with clinical issues or learn a new clinical area, and publish. Faculty pairing with staff on studies could also use the intramural funding to buy-out workload time and support dissemination. The partnership scholarship accomplishments have contributed to faculty success in achieving tenure and/or promotion. Dissemination products directly related to this partnership include: three publications, 23 podium presentations, and eight poster presentations delivered at local, national, and/or international **Challenges & Facilitators** differing academic and practice culture and policies, roles and responsibilities of the faculty and each research partner, and recognition of adequate time and funds to conduct research. Finding nurse-faculty pairs of researchers with similar interests was challenging - **Facilitators for success are a c**ommitment by both institutions to the overarching goal of this partnership and a willingness to modify the terms as needs change. Impediments to the original partnership that paired individual staff nurses with faculty members were recognized within the first few years.	
Gething and Leelarthaepin 2000	academic setting, Australi	The article documents the process of developing a research culture and enhancing research participation among nurses employed within the Faculty of Nursing	Qualitative, Case study from Australia "conducting a research needs analysis of staff" And reports the strategies implemented to promote research.	not applicable	**The factors hindering research participation** are many and are often beyond the influence of an employer. For example, demographics cited earlier indicate that the staff profile contained a high proportion of women. Many of these people were responsible for the care of young families and were actively involved in higher degrees. In addition, at the time, staff had high teaching loads, leaving little time for additional duties. **Strategies were implemented**: (3 steps) ***The first* activities**: was to conduct a research needs analysis of staff in order to determine current levels of research skills and to provide directions for research promotion strategies. ***The second step:*** was to implement these strategies. **1-** Development of faculty research management plan, **2-** Development of faculty research performance indicators. **3-** Research skill workshops.**4-** Faculty seeding grant system. **5-**University grant scheme.. **6-** Research mentorship **7-** Research colloquia. **8-** Faculty research day. **9-** Establishment and administration of scholarships to staff undertaking PhD study. **10**- Preparation of a book about research. **11-** Reduction of teaching loads. **The third step**: was to assess changes in research confidence, perceived skills participation, and also to determine the need for strategies that would continue in the future. Results indicated increases occurred in research participation and in confidence about research skills over the period between the two data collections.	

Green , Jeremy Segrott, Jeanette Hewitt, 2006	Academic nursng, **UK**	The study explores a university department's approach to building research capacity in nursing and midwifery, evaluating various methods and outcomes.	Qualitative research. Case study methodology documentary **Data collection**:: in-depth interviews, a focus group and documentary analysis.	27 academic and related staff and a focus group with seven staff	**Research Capacity Strategies:** In-house undergraduate and postgraduate programs, seminars and workshops, Mentorship, Research focus and interest groups, Opportunities for neophytes to participate in research project. Supportive research infrastructure. **Developing a Research Culture.** "inclusive approach" had enhanced research capacity among individual but reducing output of research publications by experienced researchers. -Powerful feelings of fear and anxiety are reported among neophytes. -Staff development and training were identified as key facets of the department's research strategies and overall strategies . **Management and Organization** - mapping current research activity is a crucial first step in building capacity, -- need for formalized support structures for novice researchers. **Problems and challenges:** a lack of time for research, linked to high teaching loads; managing the interface between teaching, research and practice missions; and a complex interaction between these factors and individual motivation and attitude, cultural backgrounds and responses to changing expectations. *Wider Context:* external factors, including the demands of purchasers and regulatory bodies, wider professional identities, and the need to achieve optimum RAE performance, the need to obtain external grants, (The emphasis on research was seen as problematic by participants because it devalued teaching activity and placed pressure on individuals to become research active in order to achieve external recognition and promotion)	**Limitation** 1- conducting 'insider research' produced tensions between achieving ethical probity and methodological rigour. 2-The paper examines the experiences of a single department case studies produce theoretical rather than empirical generalizations, and do not rely upon representativeness for their validity.
Green, et al 2007	Academic nursing, **UK**	To reports the findings of a comparative case-study project which evaluated the development of nursing research capacity in two academic schools (Welsh and English)in the United Kingdom.(to explore the situated process of research capacity development, as well as understandin g outcomes)	Qualitative research. comparative case-study approach. Data collection: depth interviews, focus groups and documentary analysis.	**34 nurse educators and senior managers** (depth interviews) - **lecturers and tutors** (two focus groups)	Strategic approaches to capacity building : Both schools had formal written strategies, The Welsh School's approach to research capacity development was INCLUSIVE. The English approach was more FOCUSED on those who showed potential or sought to undertake further studies. Both schools used similar strategies Staff in both schools had postgraduate degrees or were studying for them. **Results:** BOTH had increased levels of research income and published research outputs considerably since their initial formation in 1991 and 1995 respectively. There was clear evidence of an overall increase in research income and outputs at the Welsh School. The School had also improved its RAE rating, from a grade 2 in the 1996 Research Assessment Exercise to a grade 3b in the 2001 Exercise. The Welsh institution was marginally more successful than the English School, in terms of its external research assessment rating. Welsh School had been more successful in terms of staff promotion at senior level which may be linked to its multidisciplinary nature, and the presence of experienced researchers from outside nursing. **Building a research environment and culture** The challenges and problems encountered: High teaching loads and lack of time were identified as key barriers to undertaking research, and questions were raised about equity of workload. Existence of a 'culture of caring' in which students were over-taught, and provided with excessive support. It was felt that moving away from didactic lectures to styles of teaching that encouraged students to be more independent would improve the quality of the education they received and free up research time. The provision of nominal days for lecturers' research activity at both schools had been one response to these problems, **Organising and managing capacity building**. The infrastructure at the outset lacked the robustness to support the management of change and the monitoring and evaluation of the strategies, although progress was made during the conduct of this research project. -BOTH schools were aware of the need for academic leadership. --The lack of a senior research leader since the departure of the foundation chair at the English School inhibited the continued development of research capacity. -At both institutions the symbolic significance of academic leaders was noticeable. -Participants in the Welsh school suggested that alongside offering practical support, academic leaders also played an important function as positive role models, and their presence raised staff morale and generated credibility in the wider academic community. - The English School's more focussed approach was probably more realistic. - Welsh School's experience suggests that even if support is offered to all staff, NOT everyone will avail themselves of it.	**limitation** :The first limitation concerns the inevitably partial nature of any attempt to describe and evaluate the complex and multi layered process of building research capacity. We have chosen a case-study approach to capture the in-depth experiences of the schools themselves, since this sheds light on how building capacity actually works. But it would be equally possible to concentrate on the effects of particular strategies, and to track identifiable changes as a result of structural reorganisations. **-The** second limitation was the study's 'insider' status at both

					-Managing support and workloads was an **important issue** for BOTH schools: The English School adopted a more informal approach to the management and co-ordination of support for research. At the Welsh School there appeared to be a greater degree of management of staff workloads in order to release lecturers to undertake research, but there were challenges in redistributing workload and ensuring equality of opportunity. . It was suggested that staff on academic-related contracts felt pressured to do research in the English School as increasing numbers of their colleagues did so.. - Indeed one senior member of staff felt that the deliberate policy of not placing pressure on staff to undertake research immediately following the move of the School into higher educa- tion had even led to some individuals feeling 'left behind' when they began to take an interest some years later. A number of participants at the Welsh School felt that it was necessary to 'capture' staff interests and research activity, and then provide information regarding opportunities for research involvement or funding to individuals in a more targeted way. – Also, individuals needed to do more to share personal research interests and activities with colleagues and make a greater effort to involve novice researchers in funding applications. An area of difference between the two schools was in the corporate versus individual stance in terms of school direction and individual responsibility. The English School had overall a much more 'hands off ' approach. However, for both schools, credence was given to balancing support and guidance with the importance of individuals taking responsibility for developing research. Lack of confidence and fear of failure were demonstrated by those that clearly needed support.	study sites, necessitating restrictions on who could be involved in data collection, and involvement as participants. **Future study:** academic schools need to find effective ways of linking together researchers with different levels of experience, particularly neophytes and academic leaders. Future research needs to develop current understanding of these interfaces, both at the local and national level.
Gursoy, 2020	Academic /Practice-Clinical **USA**	The study aims to analyse the influence of a nursing school and an urban hospital on nursing education, practice, and research.	A qualitative stud**y Data collection:** in-depth interviews using an open-ended questionnaire .	Nursing faculty members , Nurse clinicians and Nurse managers	**Results:: Mutual gain and benefits,** three sub-themes were identified: shared expertise, resources, and opportunities; increased quality of education; and contribution to the overall institutional reputation. **CE as the cornerstones of the partnership:** the CEs, who perform dual roles as faculty in the school of nursing and **CEs** in the hospital, were cornerstones in the sustainability of the partnership. **CEs** are the bridges between the two worlds. played a role in eliminating the gap between theory and practice and facilitating mutual understanding between the two sides: **CEs** contributed significantly to the knowledge and career development of nurses working in clinical roles, **'Leaders as key actors':** there should be leaders that believe in the importance of collaboration and both leaders -- the dean and the chief nursing officer -- should have good communication and a broad vision. **'Roadblocks to sustaining collaboration:** it is not always easy to work together; difficulty in measuring direct cost-effectiveness; financial issues; and two different worlds/cultures.	**Future study :** Reliable instruments should be developed to accurately measure and evaluate the contribution and cost-effectiveness of such a partnership to the institutional mission and patient outcomes.
Jootun & McGhee,. (2003)	academic setting. **UK**	To explore some ways in which all stakeholders in a nursing school can foster a research culture to promote increased	Opinion article Informed by the British Nursing Index.	not applicable	**Barriers to developing a good research culture:** nursing is relatively new to academia, relatively applied, practice-based nature of the profession. **Developing a research culture:** Effective management of change. School strategic plan to support and improve the quality of its educational mission' .A community of scholars in which there is trust, open discussion and good networking between all those involved. Excitement and enthusiasm accompany hard work, and all those involved need to share the responsibility. The research policy should reflect a climate in which achievement is appropriately celebrated and setbacks are acknowledged. Leadership from the head of the school is crucial in the development of a research culture. Leadership entails the creation of a climate that encourages risk-taking and innovation and making a visible commitment to research through the establishment of the appropriate organisational structures and processes. -The research culture within a nursing school should centre on forming a seamless mesh of research activity and dissemination of information.	

		research activity.			The school should start by establishing a database of any research activity to date, **Research activity in the context of a developing research culture:** Promoting a good research culture will lead to an improvement in the quality of research supervision. Good supervision increases the rate of success in research activity, which helps to raise the overall research profile. When put in the context of nursing's relative youth in higher education, it is not surprising that nurse educators have been struggling with the competing demands. -The socialisation of the professional within the new research culture will eventually lead to a critical mass of people confident to carry out research or supervise students who are doing research projects. -Organisational culture will influence the quality of research activity and supervision. Managers have a key role in enabling their staff to participate in research activity. -Any school that is building on a school-based teaching culture to create and maintain a viable research culture MUST Start building from its own existing resources. sharing of information and resources, members of the group will be able to provide academic guidance and nurture an environment in which new researchers see research as a creative and exciting activity. -Investment in appropriate resources and funding for nurses to pursue further qualifications, particularly higher degrees. -Tap into the existing research expertise within the school or other schools within the college. -All stakeholders have to be committed to the school research strategy, and management has to take a lead role in promoting research activity. Support from management will encourage nurse educators to go the extra mile needed to develop the necessary research skills. This will improve the school's research profile and track record. The school needs to continue in its effort to support and resource nurse educators who want to develop the necessary skills for undertaking research or supervising students who are undertaking research.	
Lee and Metcalf, 2009	academic and Clinical setting, Australi	To examine these issues with the clinical school staff facilitating the research process.	Qualitative study Data collection: meeting (Group discussion) and staff comment.	Nursing faculty member & Clinical Nurses	**Research undertaken: I**t is important to state that the clinicians were the primary authors on the majority of papers. Dissemination of results **The dissemination of research** findings has been undertaken by clinicians using various methods including oral and poster presentation at the hospi- tal research week, local and international confer- ences (International College of Emergency Nursing for example). **Funding:** Another measure of researchers' success is obtain- ing external funding. **Effect on clinical practice:** staff have enjoyed and benefited from being involved in the research process and are proud of their efforts when their research changes clinical practice. **Evaluation of the clinical school** : there was adequate time for research within the workload but this time needed to be pri- oritised. . -Enthusiasm from industry partners. The effective clinical links and the related research outputs were commended in the audit. The recom-mendations from the assessors were that the next strategic plan should include steps that are neces- sary to achieve the endpoints of grants and publications.	
McCarthy & Fitzpatrick 2008	academic nursing, **South Irland**	To present the strategies used in one newly established university School of Nursing and Midwifery in Southern Ireland to develop research capacity	Qualitative research. Case study guided by a Strategic plan		Key elements of the process of research capacity building: **Changing the internal culture :** to identify the priority for research development within the strategic planning of the School. **Providing appropriate research training for staff** : Academic staff members who transferred to the University were required to possess a MSc or be registered in an MSc programme. **Mentoring of junior staff:** classes and workshops, staff publication entitled 'news of the month' lists all research endeavours. A yearly research report **Consultant role:** An external consultant and Fulbright Scholar was recruited. The consultant role has been in existence for 3 years and has proved to be beneficial in providing assistance to staff and conveying a clear message about the importance of research. **Support and funding for PhD progression**: increase in registration of faculty in PhD programmes from 4 in 2005 to 11 in 2007. Funding for conference attendance and presentations: Staff members receive funding to attend conferences and educa- tional events. -Staff are also encouraged to develop linkages with other educational institutions. - Collaboration. - An annual research conference was developed and supported by the School. and the number of presentations (podium and poster) has grown from 7 in 2002 to 36 in 2007. Providing institutional support: clarifying the expectations through job descriptions, work load development (with atten- tion to research productivity as a component of workload), establishing a research strategy agreed by all staff, and facilitating sabbaticals. **Establishment of research themes and them**: Research themes specific to the School of Nursing and Midwifery were developed, building on the strengths of the senior faculty (the six with PhDs). Junior staff and graduate students are encouraged to align their research interests and projects with those of senior staff. **Future plans include** (a) profiling of themes and team members and associated projects on the School website, (b) targeting PhD research in the themed areas, and (c) encouragement of BSc (those awarded a first class degree) and MSc students to progress their research to PhD level in a coherent and planned manner.	

					Challenges include: (a) progressing PhDs studies to completion in the shortest possible time while ensuring quality outcomes, (b) maintaining motivation for research while acknowledging the demands and scholarship of teaching and administration, and (c) promoting and pursuing inter disciplinary research within the College of Medicine and Health. **Strategies' impact:** Scientific publication record: The number of publications has increased steadily during this 5-year time period: 2002–2007. The increase has been from three publications in 2002 to 67 publications in 2007. Ability to win competitive research grants: In 2002 there were 5 research proposals funded; in 2007 there were 18 research proposals funded. The amount of funding increased significantly, from 125 244 euros in 2002 to 749 343 euros in 2007.	
McCread die et al, 2018	General nursing **UAE**	To review the development of nursing research capacity building and standards for the UAE.. This review was undertaken to inform the work of the Council's newly established Scientific Research Sub-Committee.	A rapid narrative review	Not applicable	**Results: Nursing research globally and building research capacity.** lack of a consensus of the term 'building research capacity' and subsequently undertook a concept analysis. Building research capacity involves a varied range of funded, focused interventions over a significant time frame. Building nursing research capacity and capability is therefore a challenge, irrespective of the context. Low competency and limited capacity, associating this with the need for strong supervision or leadership. importance of mentorship or supervision, but also linked this to motivation or interest in the topic area. Organizational contexts and the changing roles and expectations of nurses. The importance of infrastructure and training. Nominal group technique to inform policy priorities and identified visible leadership, building research expertise and increasing the capacity of individuals and organizations . Academic-clinical partnerships, collaboration or building networks were commonly described. Building confidence is important in research capability and inevitably, this takes time. **P**articipatory *Action Research approach* to increase research participation among clinical physical therapists. *a quasi-experi-mental* design to evaluate a tripartite intervention of a research network. Capacity building is such that it requires *a holistic approach* over a significant (funded) time period to be able to nurture and build development and confidence, set baselines and measure subsequent growth. different trajectories undertaken by nurses (i.e. families/time out of work force, later study options/part time study). **Research approaches and priorities:** there were notable preferences in certain countries for particular types of approaches, that is quantitative (Asia) vs. qualitative (UK, Norway, Sweden) vs. specific participant groups, for example patient (Asia, USA) or nurse (Europe, Australia, Canada). Funded studies were better quality and published in higher impact factor journals. Various authors have undertaken nursing research priority scoping exercises using *Delphi or similar consensus methodology.* There are undoubtedly a range of challenges in undertaking capacity building and in subsequently developing research standards generally, more so in the developing world. The lack of an integrated health systems and education approach, limited (local) evaluation **Standards in nursing research**: three areas with developed specific standards or guidance: ethics, international collaboration and doctoral edu- cation.**Challenges across the MENA region in building nursing research capacity:** anti-academic attitudes among nurses and others. The difficulties in recruitment/selection, the low grade point average of most students and a lack of motivation. it is apparent that some progress is being made across the MENA region. Most studies were small, limited, single author and focused in areas of interest rather than need. Limited access to databases/platforms and a lack of fluency in English among nursing academics in Turkey. 66% of nurses in UAE are not involved in research with 85% perceiving themselves to be lacking in basic research skills.	**limitation:** Limited review as it uses one database only. addition of manual recursive searching and grey-searching did not uncover additional relevant materials, suggesting that the results are relatively robust **Future study:** Unfortunately, these journals are unlikely to be indexed to key databases and hence will be irretrievable to individuals undertaking MENA-specific searches. This is an area worthy of further review as it is potentially a rich untapped resource with which to develop nursing research in this region.
Priest, et al, 2007	Academic nursng, **UK**	To discuss and evaluate the success of our attempts to use the project as a vehicle to develop the capabilities of new researchers, by involving	Qualitative study, Using a open questions questioner	9 of the 12 members of the main project team (paper authors represen ting the	Findings 1: **the experiences of neophyte and midiphyte researchers:** Aspirations and expectations: Working as part of an experienced research team was not only an attraction in its own right, but also provided a safe environment in which to develop new abilities. **The benefits of involvement**: Specific benefits included gaining knowledge of interview and documentary analysis techniques. several co-researchers reported gaining new insights into the issues surrounding research capacity development, both in general terms, and in relation to their own schools. **Problems and challenges.** lack of time and competing pressures, lack of confidence was also raised as an important challenge. Being part of a large multidisciplinary team comprising members in two geographically distant institutions also presented logistical challenges. **Findings 2**: The experiences of research participants: Neophyte researchers were often embarrassed and anxious about asking for assistance. The development of more formalised support structures was put forward as a way of addressing such concerns. Two complementary models were favoured. One model entailed identifying senior researchers who would support junior researchers on a formal basis as a designated	

		them as co-researchers.		other three).	part of their role. The second structure involved a scheme whereby novice researchers were released from their teaching duties and 'seconded' to an experienced group of researchers for a fixed period to learn about the research process. This visibility, coupled with formalisation of support roles was seen as an effective way of reducing the anxiety and embarrassment of asking for help. **Three key benefits of seconding neophytes on a formal basis to research teams:** 1-enable neophytes to see the whole research process, whereas informal involvement in research projects tended to occur during the middle stages of a project. 2- Help ensure neophytes were treated as full team members, and gain the learning experiences they needed, rather than being used as 'workhorses'. 3-Enabling effective forward planning, mean- ing the interests and needs of novice researchers could be matched with forthcoming projects.	
Roets & Lubbe. l 2014	acdemic setting, **South Africa**	This article reports on strategies that could be implemented in nursing colleges, previously under the jurisdiction of the Department of Health education, to enhance the research culture of an institution	A descriptive, qualitative research design. **Data collection** through a nominal group technique	5 nursing educator s AND 12 students	The five most important themes or suggestions to enhance the research culture in colleges: **1- Research knowledge:** Student participants indicated that the most important aspect that needed to be addressed to enhance the research culture was improved knowledge of research for themselves and their educators. **2- Involvement in research:** Students felt that they should be actively involved in research more often and at earlier stages in their curriculum. **3- Research topics:** Student participants felt that they would like to choose/select from more interesting topics for research and were supported by the educator who said: "I would prefer to choose my own topic for research." **4- Research mentoring:** Students wanted the mentors or supervisors to be knowledgeable and available to support them, but the educators felt that: "I had never been involved in the practical part of research and found the actual process and translating the theory into practise very difficult. **5- Research support:** Students and educators felt that financial support for students to conduct the research is important. They wanted to be financially supported to get internet access, photo copy articles and questionnaires. Educators felt that "students needed to go to internet cafes and do not have the money to pay". The student and educator participants felt that all of these aspects should be incorporated in strategies developed by the institution to enhance the culture of research in an academic community.	**LIMITATIONS** One nominal group discussion was conducted with willing student participants from different colleges and five educators completed reflection reports. The study results can therefore not be generalised, but can be transferred to similar.
Schwind et. al, 2014	Academic nursing, **Canada**	This article explicates one cluster's development process, and specifically, its adoption of the narrative reflective process (NRP).	A qualitative research. Narrative approach , **Using:** Narrative reflective process:	Group of nursing faculty members	THE ROLE OF CREATIVITY IN COLLABORATION: NRP is embodied and holistic, and it allowed the honesty of narrative, in its different forms of stories, drawings, and metaphors, to permeate our research cluster forma- tion process. It helped us access our creative energy and commitment to increase our collective scholarship in the area of person-centered care by strengthening our relationships with one another. NRP increased our capacity to connect with one another as a means of furthering our study of person-centered care. OUTCOMES AND CONCLUDING THOUGHTS A cluster of minds, voices, and ideas can be powerful. As a research cluster, not only do we support each other in our individual programs, but we also seek to advance the overall capacity of scholarship because it relates to health and illness across a continuum. We are disseminating our works in progress at local and international conferences that support personcenteredness and whole person approaches. Overall, belonging to this research cluster has enhanced the quality of work life for its members. As a result, our cluster provides a collegial and supportive atmosphere in which cluster members with a well-established program of research provide their more junior colleagues with mentoring and support. -Now that we have established the cluster as an open platform for dialogue, critique, and support, our vision turns toward mutually supportive individual and group research endeavors. As we move along our individual academic trajectories, we collectively contribute to raising the profile of our institution as well as of our profession; we expand the body of knowledge that enhances the quality of human experience in education and health care. We believe that the synergy created through the NRP augmented our individual and group productivity, en- riched collegiality, and most importantly, supported the development of a schol- arly community within our school.	

Segrott, McIvor, Green, 2006	Academic nursing, **UK**	*To examines:1- The major barriers to developing research capacity 2- The capacity building strategies adopted (or proposed) within the literature. *To considers the wider context within which such endeavours take place.	Literature review, 48 studys were included for period 1999 to 2004	not aplicable	**Barriers and challenges of building research capacity:** ***1. Material constraints and organisational contexts:*** including, time for research(teaching load), administrative and clinical responsibilities, lack of fund, shortage of appropriately skilled personnel, absence of a research infrastructure slow progress in facilitating existing staff to become research active, the values and priorities of individual academic departments(teaching vs research activity). ***2. The changing roles and expectations***.(due to the changing from health sector to higher education). lack of research experience, skills or qualifications, and difficulties surrounding funding for nursing research. institution ia Not clearly including elements relating to research in their strategic plans. T**he main approaches and strategies adopted to build capacity**: • Holistic' or 'egalitarian' approach: all members of staff will undertake research in some form,(disadvantage):placing pressure on individuals who do not wish to do research (or who lack the skills) • Elitist' or 'natural talents' approach. The support and resources focuses on certain individuals who show particular interest and talent, allows individuals to choose their own direction to some extent, • A 'top-down' approach: whereby research project teams are led by experienced researchers. often produces rapid outputs, but may be less successful in developing individuals. • A 'bottom-up' approach (project teams formed of inexperienced researchers) leads to significant increases in research capacity, but is slower at producing research outputs. • A whole system approach: which combines coalitions (to achieve cultural change), bottom-up projects (to develop capacity) and top-down projects (to produce rapid results), • *Overall strategic approach: (clear overall approaches,well-defined strategies,and coherent objectives) Common AGREEMENT on the importance of mapping capacity before and after implementation of strategies. Effective research capacity strategies should be well organised, with suitable structures put in place, accompanied by strong leadership. Measuring and evaluation the impact of strategies might include changes in key outputs, levels of research participation, and shifting attitudes towards research. . **Support is backbone of any strategy:** support and encouragement must be accompanied by clear expectations however, how support should be organised and provided is a key focus of debate, - ****Balancing between Individual & institutional needs:** Research capacity must be built through focused objectives and strategies, but these must be flexible enough to allow individual creativity. 3-Turning support into Action: (recommendation/ intervention) 1. Building infrastructures .2. Research culture and environment 3. Providing training and facilitating collaboration	- little has been written about how its academic departments are addressing the challenge of building capacity, particularly in relation to developing countries. -The absence of empirical studies of capacity development in individual academic departments is especially problematic. - Organisational cultural change arguably an important facet of building capacity
Torres et al, 2017	Academic nursing , **Philippine**	To assess and describe the perceived research capacity among the faculty of UST-CON. (University of Santo Tomas-College of Nursing)	Quantitative research, a descriptive, exploratory design. Using: A survey	82 clinical and nonclinical faculty members who had a regular teaching assignment at UST-CON.	Results: Subject Demographics: the majority of the faculty were in the 30–39 age group category (45.50%), female (77.30%), married (60.60%), under the Nursing Department (86.40%), and clinical instructors (62.10%). Only about 10% (n = 7) were either at the associate professor or professor level. Knowledge and Skill on Research Process: the faculty perceived high levels of knowledge and skills in the early phases of the research process, such as in the conceptualization phase, designing and planning phase, and empirical phase compared with the analytic and dissemination phase. Inferential statistics such multivariate, coding, and thematic analyses and submitting a paper for publication, the mean scores for knowledge and skills were mainly below 3 (means ranged between 2.77 and 3.02). In almost all items, faculty rated their knowledge higher than their skills level. Research Involvement, Services, and Incentives: More than half of the faculty had experiences as a research mentor. less than half (39.3%) had been an independent researcher. faculty spent approximately two-thirds of their effort in teaching, These university-sponsored incentives included travel grants ($\chi 2 = 6.74$, $p = .029$), financial grants ($\chi 2 = 10.49$, $p = .001$), and research awards ($\chi 2 = 7.96$, $p = .0012$. Motivating and Hindering Factors in Pursuing Research Endeavors: Motivating factors:Professional advancement Research grants and funding, Tenure and promotion, Others: personal advancement , Enhancing research track record , Professional reputation Reduced teaching load , Awards and recognition Financial reward , Departmental expectations Reduced service load heavy teaching load.	**Limitation** - Rresults can only be generalized within the context of academic settings in the Philippines. - Since this was a voluntary survey, those who participated may have a positive view of research, potentially skewing the study results.

					Hindering factors: Heavy teaching load, Heavy service, administration, or committee load, Tedious research regulatory process or procedures (e.g., ERB/IRB, technical review, etc.) Poor support level from administrators, budget officers, or other university staff (e.g., Human Resources, ERB/IRB) required to complete researchers. Others: time . Fees for research services. Family issues (e.g., access to childcare, illnesses, etc.). No or limited access to intra- and interdisciplinary collaborators within the university. No or limited access to intra- and interdisciplinary collaborators from other university. No or limited access to travel funds No monetary rewards. Future Actions: college-based research center will be responsible for instituting research policies and protocols, offering workshops and trainings (e.g., trainings on Good Clinical Practice, research publication, statistics, etc.), monitoring research-related activities, providing mentoring and collaborative opportunities, and seeking research grants or funding sources. Hiring a permanent research staff or associate, who will facilitate all research processes, should be considered by UST-CON's administrators. Assistance from the administration is also imperative in promoting research capacity. Developing a short research program This 8-week online research program aims to enhance the knowledge and skill of UST-CON's faculty in selected research designs, basic and advanced statistical data analysis, qualitative data analysis, and research publication.	
Tranmer, et al, 2020	nursing Academia, **Canada**	to provide an overview of the current external and internal, processes and structures, relevant to capacity of nursing faculty to engage in research.	An opinion piece informed by a review of national research funding trends for nursing	not applicable	**Barriers to RCB:** ***External factors:*** 1-fund: limited research funding, decrees in funding from 13 million dollars in 2013 to 5 million in 2018. Success rate of grant submission is very low (18 -24%,) thus, the number of nurse-led projects will continually decrease. 2-Supply: number of nurse scientist. The number of graduates is relatively small, at approximately 60 new graduates in Canada per year. - There is a small pool of nurse faculty/scientists to obtain funding and lead research because of: - Time needed for new faculty to develop a comprehensive research program and Some new graduates may not assume academic positions. ***Internal factors:*** 1-contuing change in setting/ environment (having new staff, new search area). 2-Issues related to equity, diversity, and inclusion will continue to influence research capacity. 3- assignment of administrative duties . Strategies: --Establishing QNHR(research group); with three research themes: QNHR`s processes and structures support the development of individual faculty research through knowledge translation activities (e.g., academic series, participating in, and hosting local research conferences/meetings). --Develop comprehensive methodological platforms to ensure extensive and rigorous methods to support for research led by individual nurse faculty. **Recommendation**: 1. Research excellence: through offering peer review, expert consultation, and methodological support. 2- Identify and build upon faculty strengths: 3. Address strategic priorities: 4. Creatively seek sources of funding: 5. Enhance research outputs: 6. Engagement with patients, families, communities, and partners: 7. Iterative processes:	**A framework** for assessing and promoting nursing research capacity which consisted of four main components: (1) research input (i.e., training programs, number of doctoral and postdoctoral students, and student financial support); (2) research productivity (i.e., research prepared by faculty, financial support for nursing research, establishment of teams, centers, and chairs); (3) research output (i.e., publications, awards, and presentations); and (4) research impact (i.e., patient care outcomes, practice guidelines, and policy implication; (Canadian Association of Schools of Nursing/Association

						Canadienne des E´ coles de Sciences Infirmi eres & M.E. Jeans and Associates, 2008).
Traynor, 1999	Academic nursng, **UK**	To examine approaches to undertaking nursing research and building research capacity in higher education institutions in the United Kingdom (UK).	qualitative study, Interview/ survey	Heads of nursing departm ents, OR senior figure with responsib ility for research.	**Success factors for research:** access to other university disciplines with good RAE scores, good support services. Access to appropriate research expertise and the use of methods appropriate to the research question. **Research capacity**: One respondent drew a vivid picture of what an underdeveloped research capacity could mean in practice in a nursing department. The picture appears demoralizing. -Suggesting that only a small core of researchers doing original research was necessary. -Strategies that they had used, or proposed, to boost this capacity. These included using positions of in¯uence, such as local R&D committee membership to argue for measures that could redress inequalities in research opportunities between nurses and other health care disciplines. **The researcher/lecturer/tutor issue**: an elitist approach, concentrating resources and effort upon researchers who either already had a proven record in research or who, after scrutiny of their curriculum vitae and, given the right `opportunities', looked suitable for development. -Heads were at pains to present the concentration of resources on those experienced researchers not so much as effecting an exclusion but in terms of allowing each individual to follow their own natural talents. Nurse tutors are NOT constituted as `proper' academics, or as `academics. -- Instead of selecting particular individuals for development as research active staff, a generalized approach to development was taken. There is a problem with the `natural talents' model, that of in-built instability. People may wish, for personal and career reasons, to change: This is egalitarian, but as this respondent suggests, it can lead to additional pressure for staff with heavy teaching commitments. The Research Assessment Exercise The informant from the low scoring department expressed the most frank scepticism about the RAE. -It was clear that institutions had taken up RAE scores as a staff or departmental performance measure. - collaborative partnerships, seeking out `other disciplines with good RAE scores' (high scoring department).	
Worrall-Carter, & Snell, (2003).	Academic setting, **Australia**	To explore nurse academics' perceptions and experiences of scholarship and research	Qualitative research. A grounded theory approaches. Interviews were carried out with 20 nurse academics in four Australian states.	20 nurse academic s in four Australia n states.	RESULTS AND DISCUSSION **Problems stemming from transition to academia:** due to their lack of experience with the research process and with writing. -**Trying to 'do it all'**: participants in this study indicated they felt under considerable pressure to gain higher degrees, undertake additional research and publish, -The 'huge push to do research' created an enormous amount of anxiety. These included an inability to write well and to prepare grant applications, and a severe lack of time to undertake or write up research while at the same time completing higher degrees. -**The experience of writing:** Writing was perceived to be problematic for some because they had previously been 'taught to be as objective as possible' when writing academic papers, which meant that there was little opportunity for 'creative writing'.- -Applying for research grants: Obtaining research grants was considered to be very difficult for nurse academics due to their lack of qualifications and their lack of expertise in, and a history of, scholarship. - lacked confidence in their ability to write, despite having many years of nursing experience and multiple nursing qualifications. One senior lecturer said that what she found difficult was dealing with her own inner securities, not necessarily the work. **Gaining higher degrees:** **Meeting the challenge of research and scholarship**: At three institutions in this study, there were structures in place that allowed nurse academics to fulfil their roles while enjoying a high level of job satisfaction **Redefining responsibilities: In** the three institutions where structures were in place, senior participants who were given the role of developing a research profile within their institution were not expected to take on large administrative duties, such as major roles of co-ordination. -Allowing academics to teach in their areas of expertise for a number of consecutive years encouraged the development both of their areas of expertise and of the subject. Allowing nurse academics who had a strong preference for teaching not to engage in research. **Organising workloads and making time:** At three of the institutions in this study, the monitoring of workloads occurred at various times during the year, often with plenty of notice in order to allow for planning for the following semester.	

					Adapting work patterns: This participant also made the comment that having a central theme or focus meant that his research informed his teaching and clinical practice. -Another participant was advised by a colleague against being involved in too many things because of the risk of not doing any of them well. Lack of confidence is also relevant. For example, one participant stated that many nurse academics use their heavy workloads as an excuse NOT to become involved in research because they are often frightened of carrying out unfamiliar roles. Thus, heads of nursing faculties need to allow staff to engage in research and support them during the process. **Professional development support:** Nurse academics in this study indicated they were offered support through continuing education, both in their schools and in the staff development units. Participants described a number of different sessions and activities, such as writing workshops, that were offered by staff development units within their university. They spoke of such programs as being well attended and beneficial. At some institutions, financial assistance was available to support research or study for higher degrees. -In the present study, seeding grants seemed fairly accessible, and one lecturer who had found it very difficult to obtain a research grant from the university spoke about how useful the seeding grants had been. **Collaboration with others**: Participants spoke of a number of benefits of collaborating with other disciplines. Many participants identified specific benefits of having informal mentors in other disciplines, both in collaborating on writing for publication and in engaging in research. Other ways of making connections with other disciplines included offering courses in these disciplines; Nurse academics studying in disciplines A change in values: number of participants in this study spoke of an increase in the valuing of research and scholar- ship, and the need for research to inform teaching and practice. The change in how research was perceived and valued was occur- ring not only at the more senior levels of senior lecturer and above, but also at the level of lecturer. Exposure to the academic environment has had a significant influence on nurses, and it is not necessarily the case that nurses engage in research for purely extrinsic reasons, such as in order to meet their appraisal targets.	

Appendix D. Barriers to RCB in different levels

Individual level.	College level	Network/ Relation level	University level	National level
• lack of relevant knowledge • pressure and anxiety • inability to create grant applications • lack of adequate time • lack of mentorship • lack of training, • lack of support for junior faculty • reduced motivation	• lack of confidence and motivation. • lack of adequate time. • excessive teaching loads, • lack of a research culture, • lack of knowledge and support • Research expertise, leadership,	• cultural differences. • being accountable to managers in both setting. • competition on available time and funds. • responsibilities of every researcher and the entire faculty. • insufficient resources • lack of research capacity strategies. • differing key performance indicators	• lack of funding. • Absence of infrastructure • Rewarding system • Intra and interdisciplinary collaborations	• anti-academic attitude • limited access to critical platforms • a lack of English proficiency • lack necessary research skills

Appendix E. Strategies and facilitators to RCB in different levels

Individual level	College level	Network/ Relation level	University level	National level
• Academic leave • research maintenance funding, • reduced teaching load, • students' stipends, • visiting professors • organizing workloads • external networks of research • enhancing individual's commitment/motivation • work habits	• In-house graduate programs • Workshops and seminars • Research focus • Interest groups • Mentorship • internal culture • Research training • Consultant role • Financial Support • Fund for Ph.D. • Institutional support	Partnership	• Faculty development • Networking forums • Harnessing available resource • Motivation • Collaboration	• Strong leadership • Infrastructure development • academic-clinical partnership

Appendix F. Document Data Entry Sheet

DOCUMENT DATA ENTRY SHEET

	DEMOGRAPHIC DATA
1	Document No: …… Date produced: ……/…./…… Document Title: …… Focus or main topic: …… Original Source of the document: …… Author (creator) of the document: …… Target audience: …… Location: (i.e., where was it done?): …… Length of the document: ……
2.	**TYPE OF DOCUMENT (Check one):** ☐ Strategic plan ☐ Mission statements ☐ University policy documents. ☐ letters Report. Minutes of meetings Annual report of research productivity ☐ Research committee ☐ Other……☐……
3.	**UNIQUE PHYSICAL CHARACTERISTICS OF THE DOCUMENT** (Check one or more): ☐ Handwritten ☐ Typed ☐ physical evidence: (like poster, flyers, training material) Other……
	DOCUMENT INFORMATION
4.	Ex: A. Rational of the document. (Why was this document written? (purpose) B. What are the key words or phrases used? C. Research activity D.
	Use of the word "research" and (capacity, activity, culture etc)
	STRATEGY: A. Broad Research Capacity Strategies identified (Aims)
	B. Specific Research Capacity Strategies identified (Objectives)

5.	**Challenges and Issues**
6.	**Outcome of identified strategies**
7.	**Research Note and COMMENTS (Summery)** - Brief description in the researcher own words. - How this document was similar to or different from others.
8.	**ANY OTHER/ COMMENTS**

Appendix G. Interview Topic Guide

Interview Topic Guide for Academic Staff

1. Can you please described your role here?
    - Prompt on time given over to student support/teaching/administration
2. To what extent is research part of your academic role?
    - IF YES: Can you tell me more about how this developed (prompt for any specific research field/expertise)?
    - IF NONE: can you tell me about research activity that you would wish to be involved in?
    - How has this changed over time/your career?
3. What attempt you have made trying manage your time and making balance between teaching, and research?
4. What motivates you to conduct research?
5. Have you had any research training?
    - IF Yes: Prompt on how this has evolved and sources of support
    - IF None: Why is this, what training would you have liked to have had?
6. How do you see your skills in conducting research? For example, your skills in methods, writing skills.
7. How do other external commitments (like family responsibility) affect your research productivity?
8. What is your experience in getting access to available resources (funding, publication costs)?
9. What available resources do you see as being most useful to help you in conduct research?
10. Who do you regard to be your research partners/networks?
11. More generally, what do you see as the main barriers to nursing research?
12. Is there anything else you would like to say/add?

Interview Topic Guide for Academic Leader

1. Can you please describe your role here?
2. Prompt on time given over to educational leadership/research leadership and administration
3. To what extent is research part of your academic role?
4. IF YES: Can you tell me more about how this developed (prompt for any specific research field/expertise)?
5. IF NONE: can you tell me about research activity that you would wish the department to be involved in?
6. How has this changed over time?
7. What attempt you have made in trying to manage the department's time and striking a balance between teaching, and research?
8. What motivates your institution/department to conduct research?
9. PROMPT: external/national policy/professional policy
10. What attempts at strategic change have been made in the department to help promote research activity and productivity?
11. What research training is offered to staff?
12. IF Yes: Prompt on how this has evolved and sources of support
13. IF None: Why is this, what training do you think is needed?
14. What research skills do you look for in your team, especially when appointing staff?
15. What is your experience in getting access to available research resources for your staff/department (funding, publication costs)?
16. What available resources do you see as being most useful to help your department conduct research?
17. Who do you regard to be your department's research partners/networks?
18. More generally, what do you see as the main barriers to nursing research?
19. Is there anything else you would like to say/add?

Interview Topic Guide for Stakeholder

1. Can you please describe your role at the university?
2. What motivates the university to conduct research?

   PROMPT: external/national policy/professional policy
3. How important is nursing research in your university?
4. What is your understanding about nursing research productivity?

5. What changes, if any, have been made in the (university) to promote research nursing activity and productivity?
6. Do you think the university provide clear criteria and goals in relation to research expectations?

   PROMPT on fund guidelines, publication criteria, and promotion policy.

7. What do you see as the barriers to university staff being involved in nursing research and increasing their research productivity?

   PROMPT Is workload an issue from your perspective?
8. How are staff supported in managing the balance between teaching and research?

9. How are staff supported in accessing available research resources? (Funding, Publication costs)?
10. What research training is offered to staff? -Particularly in the Nursing college/Dep.
11. What research skills do you look for in the university academic staff, especially when appointing staff?
12. What available resources do you see as being the most useful in helping academic staff to conduct research? Particularly in Nursing college/Department.
13. Who do you regard to be your university research partners/networks?
14. Is there anything else you would like to say/add?

Appendix H. Ethical Approval

1. Ethical Approval- University of Sheffield

This document has been removed by the authors because signatures is included in the document(s).

2. Ethical Approval- Case study 1

This document has been removed by the authors because signatures is included in the document(s).

3. Ethical Approval- Case Study 2

This document has been removed by the authors because signatures is included in the document(s).

Appendix I. Consent Form for Interview

Participant Consent Form

Title of Research Project: Barriers and Facilitators to Research Capacity Building within Nursing Educational in Saudi Arabia Institutions.

The University Of Sheffield.

Please tick the appropriate boxes	**Yes**	**No**
Taking Part in the Project:		
I have read and understand the information sheet dated …. /…../…. and the project has been fully explained to me. (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	☐	☐
I have been given the opportunity to ask questions about the project.	☐	☐
I agree to take part in the project. I understand that taking part in the project will include being interviewed with an audio recording (video recording is optional). I understand that should I be invited to a subsequent interview or research activity, I have the right to decline further involvement.	☐	☐
I understand that my participation is voluntary and that I am free to withdraw at any time until the data analysis begins. I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.	☐	☐
How my information will be used during and after the project:		
I understand my personal details such as name, phone number, address and email address etc. will not be revealed to people outside the project.	☐	☐
I understand and agree that my words may be quoted in publications, reports, web pages, and other research outputs. I understand that I will not be named in these outputs unless I specifically request this.	☐	☐
I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I understand and agree that other authorised researchers may use my data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I give permission for the anonymised and confidential transcript that are created from my interview to be deposited the University of Sheffield's library and at White Rose Research Online depository so it can be used for future research and learning.	☐	☐
So that the information you provide can be used legally by the researchers		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	☐	☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Researcher	Date	Signature

To be signed and dated in presence of the participant.

Copies:

Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the letter/pre-written script/information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be placed in the project's main record (e.g. a site file), which must be kept in a secure location.

Appendix J. Information Sheet

INFORMATION SHEET

You are being invited to take part in a research project. Before you decide whether or not to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. If there is anything that is not clear or if you would like more information, please do not hesitate to contact Abdulhamid Alrwili agalrwili1@sheffield.ac.uk. Please take time to decide whether or not you wish to take part. Thank you for reading this.

1.RESEARCH PROJECT TITLE:

Barriers and Facilitators to Research Capacity Building (RCB) within Nursing Educational Institutions in Saudi Arabia.

2. WHAT IS THE PROJECT'S PURPOSE?

The aim of this study is to explore the research capacity building within nursing educational institutions in Saudi Arabia. This will include exploring the barriers and facilitators experienced by individuals when attempting to conduct research. The participant will be asked to take part in an interview (40 to 60 minutes) which is part of a project for the PhD degree in nursing at the University of Sheffield.

3. WHY HAVE I BEEN CHOSEN?

The project will involve nursing academic staff (junior and senior) and academic leader who work in nursing educational institutions in Saudi Arabia. Those who meet the criteria are invited to take part in this study.

4. DO I HAVE TO TAKE PART?

It is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to keep (and be asked to sign a consent form), and you can still withdraw at any time (until the data analysis begins) without any negative consequences. You do not have to give a reason. If you wish to withdraw from the research, please contact me via email provided with this sheet. Please note that by choosing to participate in this research, this will not create a legally binding agreement, nor is it intended to create an employment relationship between you and the University of Sheffield.

5. WHAT WILL HAPPEN TO ME IF I TAKE PART? WHAT DO I HAVE TO DO?

If you take part in this qualitative study, you will be invited for one interview and the length of the interview will be between 40 to 60 minutes. For academic staff, the interview will include open questions about their research experience in their academic role, including the barriers and facilitators to research activities. For academic leaders, the interview will include open questions about their research experience in academic role and research activities in the department/college. The interview will be via Zoom conference platform, which will be identified by the researcher. You have the right to refuse to be video recorded. The collected data during the interview will not be connected to your name.

6. WHAT ARE THE POSSIBLE DISADVANTAGES AND RISKS OF TAKING PART?

As a participant in this study, I understand the study will not affect my health status nor affect my yearly academic evaluations. I understand the study questions might make me feel uncomfortable, and I have the right to withdraw at any time until data analysis begins. I have the right to skip any uncomfortable questions.

7. WHAT ARE THE POSSIBLE BENEFITS OF TAKING PART?

There are no immediate benefits of participating in this study; however, the knowledge received may be valuable for nursing science, practice, and education.

8. WILL MY TAKING PART IN THIS PROJECT BE KEPT CONFIDENTIAL?

All the information that we collect about you during the course of the research will be kept strictly confidential and will only be accessible to the researcher and his academic

supervisors. Your privacy and confidentiality will be protected by the use of a pseudonym. Your data will not be connected to your name or university name. The files will be transcribed, and the data will be in a computer that is password protected that only the researcher has access to. You have the choice to decline the use of the video function. Your contact information will be destroyed after the study is done.

The audio and/or video recordings of your activities made during this research will be used only for analysis and for illustration in conference presentations and lectures. No other use will be made of them without your written permission, and no one outside the project will be allowed access to the original recordings. Should you disclose information to suggest that the actions of you or others have resulted in serious harm, we may need to share this information with other relevant agencies. In keeping with the University of Sheffield policy, we will inform you of our actions.

9. WHAT IS THE LEGAL BASIS FOR PROCESSING MY PERSONAL DATA?

According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest' (Article 6(1)(e)). Further information can be found in the University's Privacy Notice https://www.sheffield.ac.uk/govern/data-protection/privacy/general.' Your contact information will be destroyed after the study is done.

10.WHAT WILL HAPPEN TO THE DATA COLLECTED AND THE RESULTS OF THE RESEARCH PROJECT?

The collected data from interviews will be transcripted and analysed. The collected data will be in a pseudonymised form and accessed by researcher and his supervisor. Data will be archived in the university ORDA data repository archive. Personal data will be destroyed immediately after completion of the study. The result of this study will be reported in the PhD thesis. Due to the nature of this research, it is very likely that other researchers may find the data collected to be useful in answering future research questions. We will ask for your explicit consent for your data to be shared in this way.

11. WHO IS ORGANISING AND FUNDING THE RESEARCH?

This project is organised by the University of Sheffield and funded by the Royal Embassy of Saudi Arabia Cultural Bureau.

12. WHO IS THE DATA CONTROLLER?

The University of Sheffield will act as the Data Controller for this study. This means that the University of Sheffield is responsible for looking after your information and using it properly.

13. WHO HAS ETHICALLY REVIEWED THE PROJECT?

This project has been ethically approved via the University of Sheffield's Ethics Review Procedure, as administered by the 'Nursing department'. Also, ethical approval was obtained from the local ethical committee at the (name of university)

14. WHAT IF SOMETHING GOES WRONG AND I WISH TO COMPLAIN ABOUT THE RESEARCH OR REPORT A CONCERN OR INCIDENT?

If you are dissatisfied with any aspect of the research and wish to make a complaint, please contact [Abdulhamid Alrwili; agalrwili1@sheffiled.ac.uk] in the first instance. If you feel your complaint has not been handled in a satisfactory way, you can contact the Head of the Department of Nursing, Professor Tracey Moore tracey.moore@sheffield.ac.uk. If the complaint relates to how your personal data has been handled, you can find information about how to raise a complaint in the University's Privacy Notice: https://www.sheffield.ac.uk/govern/data-protection/privacy/general. If you wish to make a report of concern or incident relating to potential exploitation, abuse or harm resulting from your involvement in this project, please contact the project's Designated Safeguarding Contact [Professor: Tony Ryan t.ryan@sheffield.ac.uk]. If the concern or incident relates to

the Designated Safeguarding Contact, or if you feel a report you have made to this Contact has not been handled in a satisfactory way, please contact the Head of the Department of Nursing [Professor Tracey Moore tracey.moore@sheffield.ac.uk] and/or the University's Research Ethics & Integrity Manager (Lindsay Unwin; l.v.unwin@sheffield.ac.uk).
15. CONTACT FOR FURTHER INFORMATION:
I have greatly valued your participation in this research study and your willingness to share about your experience. If you have further questions about this study, you may contact: Abdulhamid Alrwili agalrwili@sheffiled.ac.uk or Professor Tony Ryan t.ryan@sheffield.ac.uk Note: You will be given a copy of the information sheet and a signed consent form to keep.

IF YOU ARE INTERESTED TO TAKE PART IN THIS PROJECT, PLEASE CLICK ON "YES" AND CONTINUE TO THE NEXT PAGE FOR THE CONSENT FORM.

Online version of information Sheet:

https://qfreeaccountssjc1.az1.qualtrics.com/jfe/form/SV_exHxFUR2CXhRoG2