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A case study of factors influencing remote university nursing graduates and their decision to work in a remote hospital

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Chapter 4

Methodology/Design

Introduction

This chapter will provide the overall approach taken in the study, including the rational for the methodology and the design. It will also provide a description of the sampling techniques, data collection processes and data analysis procedure, together with ethical considerations and approvals.

In deciding the approach for this study it was necessary to pose a research question based on its purpose and objectives. The question posed was, "What are the factors that influence remote school of nursing graduates in their decision to work in a hospital in the Kimberley?" The purpose was not to predict, control or generalise as in a positivist approach, rather it sought to explore and describe the experiences of nursing graduates and the context that surrounded their decision for employment. Given that the researcher was interested in talking to graduates about their decision to work in the Kimberley, it was deemed appropriate to take a naturalistic approach to the study.

Naturalistic inquiry

Naturalistic inquiry is a general characteristic of qualitative research and refers to the study of phenomena in a natural setting. Such a characteristic provides an alternative to a positivistic inquiry (Lincoln & Guba, 1985). Qualitative research is interested in how people interpret their experiences, how they construct their worlds and what meaning they attribute to their experiences (Liamputtong, 2013; Merriam, 2009). A qualitative approach provides an opportunity for voices to be heard as participants explain their feelings about the phenomenon under study, including the process and the significance it has on their lives (Liamputtong, 2013). As well as asking, "what is it?" naturalistic studies ask "explain it to me – how, why, what is the process, what is the significance?" (Denzin & Lincoln, 2008; Hesse-Biber & Levy, 2005, p. 28). Asking the participants to describe their point of view enabled the meaning of the phenomenon to be uncovered from their perspective, rather than

the researcher's viewpoint. Fundamentally, every qualitative design has basic qualities such as a focus on meaning, understanding and process (Creswell, 2009; Denzin & Lincoln, 2011; Patton, 2002; Yin, 2009).

Case study

A case study design was chosen for this study as the researcher was interested in gaining an in-depth description from the graduate's perspective and interpreting their responses within the context of a remote area. It is argued that this approach acts as a guide to researchers when investigating the relationship between a phenomenon and contemporary real life experience in which there is little control over events. It also supports the deconstruction and subsequent reconstruction of the phenomenon under study (Yin, 2014). Contemporary events are better considered utilising a case study method particularly when the relevant behaviours cannot be manipulated (Yin, 2009). In this study the graduates were powerless to manipulate the environment and the culture, including influences from the nursing culture, in the Kimberley.

From a case study perspective the context of the case was situated within boundaries, but they were not clearly defined; the phenomenon and context were intertwined (Merriam, 2009; Stake, 1995; Stake 2005; Yin, 2014). The case was the graduates, who were surrounded by the context within which they operated. The phenomenon of interest was their decision to work in a Kimberley hospital. An illustration of these linkages can be visualised in Figure 4.1.
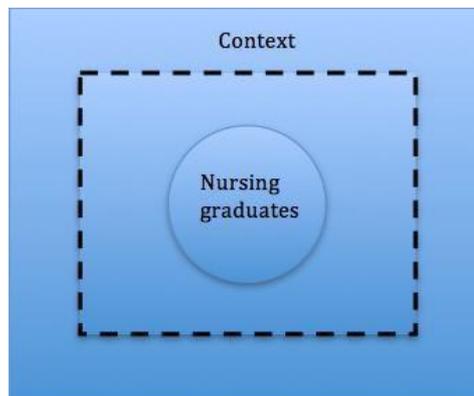
Figure 4.1 The context and the case

The relationship between the case and context represented in the above diagram is not clear-cut. The dashed line represents the blurring of the boundaries between these aspects. The context encompassed the factors that influenced graduates decision, and was understood to consist of multiple layers in an ever-changing dynamic state. Decisions made by the graduates could not be made in isolation from the context. It was assumed that graduates would understand and experience their world differently depending on: perceptions; expectations; values; background; culture; and relationships. This was naturalistic enquiry, where the world and reality as human context, cannot be considered and appreciated in isolation from the context (Lincoln & Guba, 1985; Patton, 2002). To make sense of these influences the context was explored using in-depth data from multiple sources (Creswell, 2009).

The case study method provided a research approach to explore, in depth the phenomenon and context. The nursing graduates were the key to the study; they unlocked the door to the bounded system. The rationale for using a case study approach was based on the notion that "a case study can inform professional practice or evidenced-informed decision making, in both clinical and policy realms" (Baxter & Jack, 2008, p. 544). Juxtaposed was the researcher's unique situation of being an experienced nurse immersed in the context of the study. The common features of a case study that assisted the researcher in choosing such an approach included: the natural setting in which the study could take place, the researcher's ability to

immerse herself in the context, and the availability of multiple data sources (VanWynsberghe, 2007).

This study was exploratory in that the topic had not been previously studied and was able to identify new insights and understandings of the phenomenon (Merriam, 2009; Philliber, Schwab, & Samloss, 2005; Stake, 1995). As such this single case study was revelatory (Yin, 2014). It was also descriptive in that it described the phenomena and the real life context in which it occurred (Yin, 2009).

Philosophical underpinnings of the case study research approach

The use of a case study inquiry has been described as a methodology, design or method (Anthony & Jack, 2009; Cresswell, 2013; Gerring, 2004; Merrium, 2009; Stake, 2005; VanWynsberghe, 2007; Yin, 2014). The foundational writers describing the case study approach; Stake (1995) and Yin (2014), agree that the constructivist paradigm underpins case study as a methodology, despite their own methods for undertaking research differing (Anthony & Jack, 2009; Baxter & Jack, 2008). A premise of constructivism is the social construction of reality, with multiple realities from which one can make sense of the world (Brown, 2008; Crabtree & Miller 1999; Crotty, 2013). Its meaning is assumed to be subjective and based on ones own experiences, but is influenced by interaction with others, and historical and cultural norms (Cresswell, 2013).

Constructivism claims that the truth is the result of perspective; it is relative (Crabtree & Miller 1999). It is from this perspective that case study aligns with the theoretical assumptions of the qualitative paradigm (Anthony & Jack, 2009). Both Stake (1995) and Yin (2014) contend that the topic of interest, or phenomenon, should be well explored from different perspectives, enabling the researcher to better understand the participant's reality (Baxter & Jack, 2008). The strength of the case study approach is its reliance on multiple forms of data sources that increase the trustworthiness of the findings (Ridenour & Newman 2008; Yin, 2014).

Study design

An effective research design is imperative when engaging in systematic

inquiry as it provides guidance to the researcher from the initial question to analysis of the results (Philliber et al., 1980). There are three conditions to consider when choosing a research design. First, the type of research question posed; second, the extent of control the researcher has on the events being studied; and finally the degree of focus on recent events as opposed to historical events (Yin, 2009).

In the design phase of a case study, it is advocated that constructing a preliminary theoretical proposition will guide data collection. It keeps the study within feasible limits, and assists with analysis of the data and increases the feasibility of completion (Baxter & Jack, 2008; Yin, 2014). It will also avoid the potential of evidence not fitting the research question (Yin, 2009). A theoretical proposition is an educated guess about the possible outcomes of the study (Baxter & Jack, 2008; Stake, 1995). Unlike a hypothesis in a quantitative approach, where a prediction is made about the relationship between two variables using statistical analysis, a proposition is "a hypothetical story about why acts, events, structures and thoughts occur" (Sutton & Staw, 1995, p. 378).

Theoretical propositions have also been likened to the term "issues" used by Stake (1995). Issues are seen as being intrinsically linked to the "political, social, historical and personal contexts" (p. 17). The suggestion is that a theoretical proposition leads to the purpose of the case study inquiry (Yin, 2014). Both Yin (2014) and Stake (1995) agree that propositions/issues are necessary elements in case study research as they lead to a conceptual framework that guides research. The theoretical proposition for this study was that a graduate's decision to work in a hospital in a remote area such as the Kimberley is influenced by both professional and personal circumstances.

Importantly, the stated proposition was tempered with alternative or rival assumptions as data collection progressed (Miles, Huberman & Saldana, 2014; Yin, 2014). This design provided an opportunity to explore all aspects of the topic and enabled development of new knowledge (Crowe, Cresswell, Robertson, Huby, Avery & Sheikh, 2011; Merriam, 2009).

Data sources

Both Stake (1995) and Yin (2014) advocate the use of a qualitative approach to case study, but there is a risk of missing important data using this approach. Thus, to ameliorate this potential problem and in keeping with case study approach, data was collected from a variety of sources (see Figure 4.2) providing a holistic picture of the case and its context (Baxter & Jack, 2008; Crowe et al., 2011; Luck, Jackson & Usher, 2006; Punch, 2005; Yin, 2014).

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                    ┌──────────────────┐
                    │    Group 1       │
                    │   Graduates      │
                    └──────────────────┘
              ↗              ↑              ↖
┌──────────────────┐ ┌──────────────┐ ┌──────────────────┐
│ Group 2 Workforce│ │  Archival    │ │  Group 3 Nurse   │
│     nurses       │ │  documents   │ │   managers       │
└──────────────────┘ └──────────────┘ └──────────────────┘
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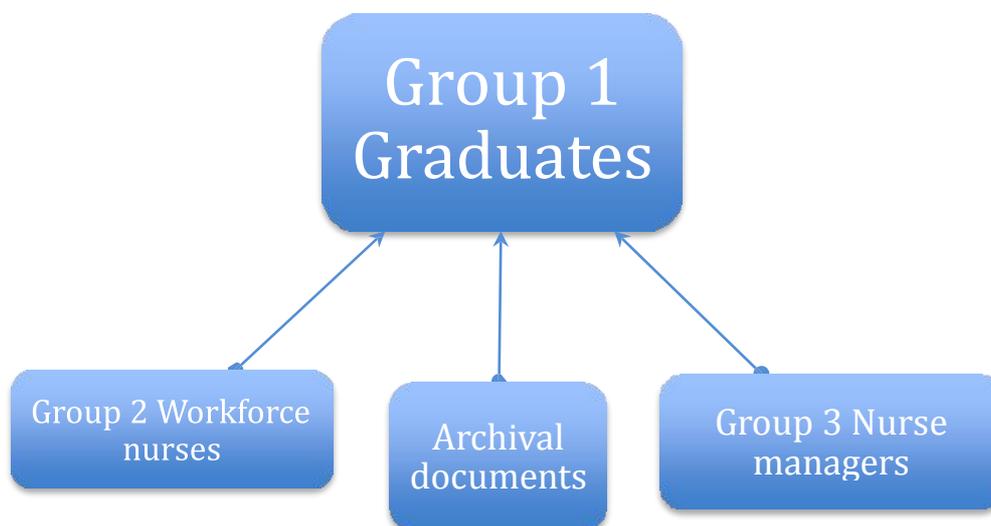
Figure 4.2 Data sources

The focus of this study was the graduates (participant group 1), but it was also important to gather data from workforce nurses (participant group 2), their managers (participant group 3), and archival documents (see Figure 4.2). These three additional data sets were selected to provide rich information about the context of the study surrounding the graduates and the influences on their decisions to stay or leave the remote area following graduation.

Graduates, as nursing students, had spent a significant number of hours, greater than 400 in most cases, on clinical placement in the local hospitals and healthcare services of the Kimberley. Workforce nurses and their managers acted as mentors, influencing graduates either explicitly, through conversation with graduates or implicitly, through their actions. The archival documents were chosen to add context, they provided information on the nursing course curriculum, student handbooks as well as the recruitment data and practices in the region.

Qualitative samples are generally smaller than those used in quantitative studies (Ritchie, Lewis & Elam, 2003). Nevertheless, smaller samples must be sufficient to assure that most perceptions of participants are uncovered and the concept of saturation reached (Glaser & Straus, 1967). Although the concept of data saturation is rooted in the grounded theory approach to qualitative research, it is a concept that has emerged in other methodologies to assist the researcher in determining the amount of data to be collected (Bowen, 2008). Data saturation is concerned with reaching a point in data collection where further gathering of data becomes counterproductive and repetitious (Denzin & Lincoln, 2011; Neuman, 2006; Taylor, Kermode & Roberts, 2007). Authors of qualitative studies generally agree that a fairly low level of data can enable the development of meaningful themes and interpretations (Bowen, 2008; Green & Thorogood, 2009; Guest, Bruce & Johnson, 2006; Mason, 2010). Furthermore, it has been suggested that expertise in the chosen topic can reduce the number of participants (Jette, Grover & Keck, 2003; Mason, 2010). This section of the chapter will identify each group and include sampling and recruitment together with the number of participants.

Sampling and recruitment

Participant group 1 graduates.

Purposive sampling technique was used to select participants for this case study as it corresponded with the need to discover, understand and gain insight into the case. Accordingly, the case focused on graduates from either the BN, or DN program undertaken at the University of Notre Dame Broome campus. Whilst the University commenced the BN program in 1999, the first students did not complete their course until 2002. In order to maximize the number of participants in the study, graduates were chosen, irrespective of gender or age, from both programs, between 2002 and 2011. All graduates who completed a nursing qualification leading to registration between these dates, and attended a minimum of one semester of study on the Broome campus, were invited to participate. It was not the intent of the study to differentiate between factors of influence for DNs or BNs although if there were differences they were noted. These people formed participant group 1.

The Reporting and Statistics Officer in the Office of University Relations and

Development, together with the VET administrator, provided a list of possible students who fitted the criteria for selection. The list contained basic demographic data such as name, gender and date of course completion. The researcher reviewed the list for potential participants and returned it to the Reporting and Statistics Officer. This process was vital in gaining permission to access the alumni database for contact details in order to facilitate a mail-out of information. Currently, students enrolled at Notre Dame retain their email account for a lifetime. Unfortunately, the currency of these details was not known, but private emails, student emails, postal addresses, and mobile telephone numbers were identified. This basic data was emailed to the WACHS Human Resource Manager. Cross-referencing of data sets determined whether graduates had worked or were still working with WACHS within the Kimberley.

Student lists were separated into emails, mobile telephone numbers and postal addresses. Names were crosschecked with the AHPRA registration database to determine if addresses correlated with the Notre Dame database and current place of practice. Currently, all nurses and midwives are required to register with AHPRA on an annual basis and enter details as to their principal place of work. If this information did not match the alumni database; the private email address was used. The Reporting and Statistics Officer sent a group text message to mobile telephone numbers, asking students to update their contact details on the alumni register.

Potential participants were emailed, or mailed: an information sheet (Appendix C); a consent form (Appendix D); a demographic questionnaire (Appendix E); and an invitation to participate in an interview. Participants who were emailed, had the option of completing the demographic questionnaire online through SurveyMonkey® (www.surveymonkey.com).

Participants with a mailing address had a self-addressed reply paid envelope enclosed and a request to return the consent form and demographic questionnaire within two weeks of receipt. Returned consent forms and demographic questionnaires (both hard copy and electronic) were then coded and stored in the study's research database (Appendix F), as well as being catalogued in the researcher's journal. The researcher then emailed participants who had provided

consent and arranged interview dates, times, and mutually convenient venues.

Participant group 2 workforce nurses.

Workforce nurses were vital in providing additional information on what they thought could influence a graduate's decision to work in a Kimberley hospital. Additionally, it was useful to know what influenced them to work in the Kimberley, as this may also have influenced what they communicated, explicitly or implicitly, to the students during their clinical practice. A purposive sampling technique was again implemented in selecting participants who could provide relevant information on the topic. Thus, workforce nurses who were familiar with Notre Dame students and graduates were chosen. All health care agencies that provided clinical placement for the graduates during their course were contacted to provide this sample of nurses (RNs and ENs) including WACHS, Correctional Services, Aged Care facilities, RFDS, General Practice clinics and Aboriginal Medical Services; including the Kimberley Aboriginal Health Service Council (KAMSC).

Permission to recruit workforce participants was requested from the line managers in these services. The managers also requested ethics clearance letters, from the WACHS Research Ethics Committee and the Notre Dame Human Research Ethics Committee. Following ethics approval, the Directors of Nursing and Clinical Nurse Managers from the healthcare agencies, were emailed seeking their support to contact workforce nurses. Two of the healthcare services, WACHS and KAMSC, allowed global email contact as well as requesting information sessions provided for their staff.

Global emails contained all the information that potential participants might need. These included: information sheets (Appendix G), consent forms, demographic questionnaires and an invitation with consent to an interview (see Appendix H). Each manager was also mailed an information package that included: laminated posters (see Appendix I), copies of a synopsis of the study and a brief literature review (Appendix J), pre-paid return envelopes, information sheets and contact details forms (see Appendix K). The contact details forms were designed to gain details from interested participants so the questionnaire and consent form could be dispatched.

47

The researcher conducted information sessions to nursing staff at WACHS sites in Broome and Derby Health Services (see Appendix L). Hard copy packs were left for the staff to complete with directions for their return directly to the researcher using the pre-paid return envelopes (see Appendix M). The researcher emailed the participants who provided consent to be interviewed arranging dates and times, at mutually convenient venues.

Additionally, the researcher presented information about the proposed study to senior nurses at three health service sites in order to obtain support and participation. These sessions included a fifteen-minute presentation allowing time for questioning. Attendees were also provided with: a synopsis of the study and a brief literature review, information sheets, consent forms, and contact details forms.

On receipt of the contact details, the researcher dispatched the consent form together with a questionnaire. The participants were given the option of completing the questionnaire in hard copy and posting it back using the pre-paid return envelope, or to complete it on line through SurveyMonkey®. Once consent forms were received they were invited to participate at a date, time and venue of mutual convenience.

Participant group 3 nurse managers.

In addition to the graduates and the workforce participants, there were a group of prominent nurse managers who provided additional insight into factors that could influence the graduate's decision to stay and work in the Kimberley healthcare workforce. This group was vital in providing information on recruitment and retention of the graduates, by virtue of their nursing responsibilities. These nurse managers were chosen through a purposive sampling technique and were well known to the researcher as she had previously worked in various healthcare agencies in the Kimberley. To counteract any potential bias, the researcher checked interview questions and responses with her supervisor.

The researcher made initial informal contact with the managers followed by an official email containing an information sheet and a consent form. On receipt of

these, the researcher organised a convenient time, date and venue for an interview. Some participants, however, chose to provide information by return email, rather than through an interview process.

As previously mentioned the rationale for choosing a case study approach was to inform professional practice. It was impossible, however, to recruit all graduates to investigate what influenced their decision of workplace. Additionally, to gather all relevant data and provide alternative or rival assumptions to form the holistic picture, other data sources were needed. Thus, workforce nurses and their managers were chosen specifically to expand existing knowledge. These participants were known to have rich information about the phenomenon under study (Patton, 2002; Streubert & Carpenter, 2011). The aim of the study and the criteria set to recruit participants were the ultimate drivers of the sample size to commence data collection. The following section will discuss the data collection process for each group of participants together with the analysis of data.

Data collection

The data collection process was not linear rather it was iterative. All data gathering was entwined; moving between documents and interviews enabling the researcher to obtain rich data and add insight to the case study (Yin, 2009). Methods such as interviewing different participants and collating questionnaires were intertwined occurring over many weeks. This process enabled the researcher to move between different data sets; building insight into the phenomenon. A characteristic of qualitative research is that the process is inductive. This means the researcher gathered data to build the case, rather than deductively testing hypotheses as in a positivist research inquiry (Merriam, 2009).
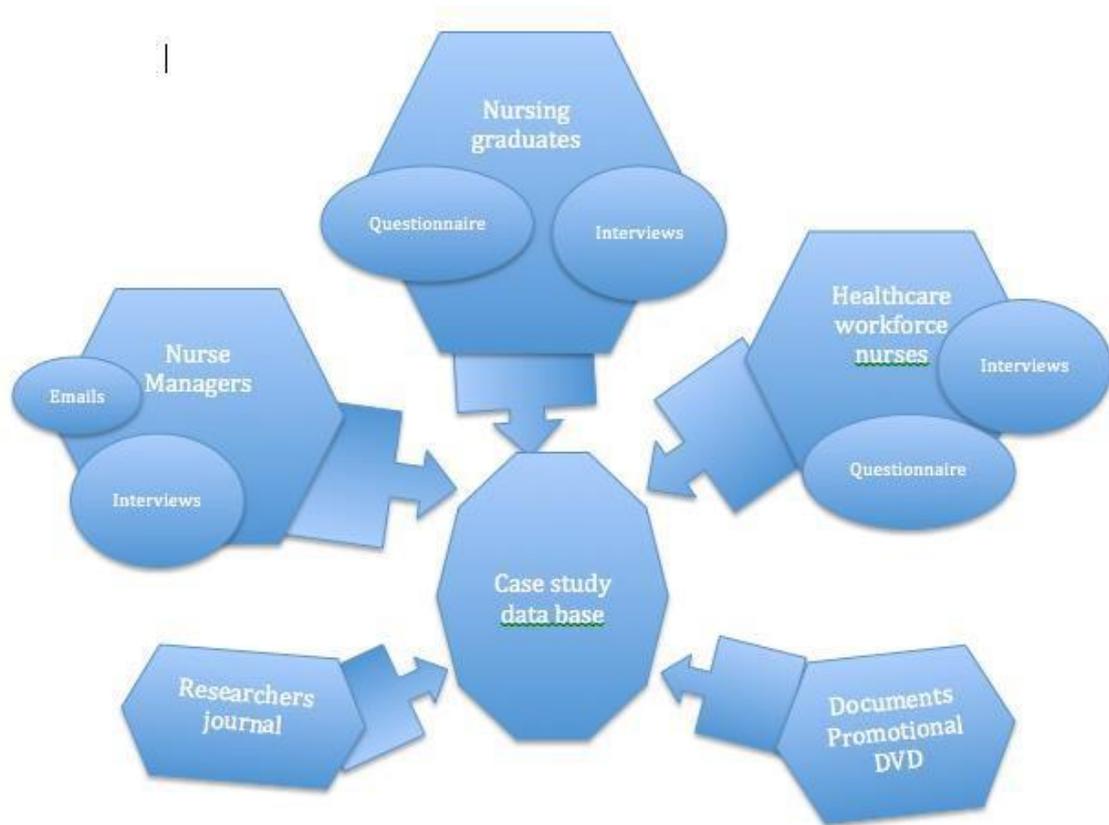
Figure 4.3 Data collection occurred in an iterative process

Data was collected by a variety of methods: questionnaires, interviews, documents, the researcher's journal, web pages, and a workforce recruitment DVD. Figure 4.3 illustrates the data collection as being an iterative process with a constant interweaving of collection and analysis of data (Miles et al., 2014). The process depended on: when the interviews took place, the timing of return questionnaires, locating and retrieving pertinent documents, and viewing the DVD. This range of data provided the means to collect rich facts required for the study. The method of using multiple sources of data enabled a broad range of issues to be investigated as well as reporting on human events and behaviours.

Participant group 1 graduates data collection.

Data from participant group one was collected using a questionnaire and an in- depth semi-structured interview. The questionnaire aimed to determine if participants met the inclusion criteria for the study as well as to explore information

about the graduates and their previous connection with remote living. Additionally, it enabled the researcher to gain consent from the participants to be interviewed. Demographic data from the questionnaires were displayed on a spreadsheet together with dates and times of interviews, enabling the planning of data collection across a variety of demographics.

Initial questions on the questionnaire were intended to determine whether graduates were registered with AHPRA. The questions also determined if graduates had worked, or had any social connections in a remote town since graduating. Additionally, participants were asked if they had lived outside a capital city and if so the location. The questionnaire was also designed to determine the remote index and the length of time a graduate had lived in a remote area prior to studying in Broome. The DoctorConnect® search map was used to determine the remote classification of the town where the graduates had lived or worked (DoH, 2015).

The second part of data collection for participant group one was an in-depth semi-structured interview. It is suggested that a researcher undertaking a qualitative study needs to have competent interviewing skills including a questioning stance, to be a careful observer, and to think inductively (Merriam, 2009). Nurses and academics also require similar competencies (National League for Nursing, 2005; NMBA, 2006). As the researcher had been practicing for 25 years, and an academic for 12 these competencies were inherent in her day-to-day activities.

Interviews were conducted once the questionnaires and consent forms were received. Participants were contacted and interview times were scheduled and confirmed at a mutually convenient time and place. This information was recorded on an excel spreadsheet. A specific routine for scheduling interviews was not required, as information from one group of participants was not needed to inform interviews of the other groups. Interviews were conducted on an individual basis, but the researcher began to discern patterns in the responses, which allowed her to use these as cues and prompts to clarify responses with other participants.

The recording of the semi-structured interview commenced following an initial introduction. The interview was designed to build rapport and clarify results

from the questionnaire as well as determining what influenced the graduate's decision to stay or leave the Kimberley following registration. Interviews were mostly held face-to-face and recorded, with participant permission, using an Ipad with application Audio-note. This application had the ability to synchronise notes and audio recordings, which enabled transfer of data to the electronic database. Teleconferencing was utilised when travel constraints inhibited face-to-face interviews. The telephone placed on a loudspeaker enabled recording using the same method as the face-to-face interviews. Each interview lasted approximately 40 minutes. During the interviews the researcher made the occasional notation on the Ipad, (journaling) which was used later to assist in data analysis. An interview schedule logged in the researcher's journal, kept the researcher on track as the evidence unravelled and accumulated.

Discussion occurred around the following topics:
- History of remoteness and whether they considered this impacted on their decision to stay or leave the Kimberley;
- Perceptions of the benefits and challenges to beginning employment as a graduate nurse in a remote area hospital;
- Clinical placement (location, metropolitan, remote or regional);
- Perceptions of workplace after graduation and current work place;
- Perceptions about studying remotely;
- Perspectives on what influenced decisions regarding employment following graduation.

Each interview was transcribed verbatim as close as possible to the time of interview. The researcher employed an external transcription service to assist in transcribing the data. Privacy was agreed through the signing of a confidentiality agreement (Appendix O). This person, who resided in the US, transcribed three interviews, but the Australian accent proved too difficult for her to understand. Consequently, the researcher transcribed the remainder of the interviews. This change in plan proved to be beneficial, as it assisted the researcher in becoming more immersed in the data and facilitated accuracy of the transcripts.

Participant group 2 workforce nurses data collection.

The researcher considered that workforce nurses could pose an influencing factor on graduates' decision to work in a Kimberley hospital, thus it was important to discover their point of view. Participants from group 2 completed a questionnaire with the addition of some open-ended questions, together with an in-depth semi-structured interview. The questionnaire was designed to gather demographic data and to pose questions where answers could be expanded in a later interview. Exploration of the participant's connection with remote areas was also of interest. Questions were therefore designed to investigate the length of time participants had worked in their current location and what had attracted them to the Kimberley. Participants were also asked if they thought graduates had the requisite skills to work in a Kimberley hospital following graduation, and if there was sufficient professional development and support for graduates undertaking the Kimberley graduate program.

The interviews were designed to introduce the study and to build rapport as well as providing an opportunity to explore participant's thoughts on the factors that they considered influenced nurses to work and live in a remote area. Interviews were semi-structured with questions designed to maximise participant feedback. Interview times were arranged as consent forms were received. Some respondents did not reply to meeting requests and others could not agree on a suitable time.
Questions were designed to explore participants:

- Role within the healthcare agency;
- Knowledge of recruitment and retention strategies within the Kimberley nursing workforce;
- Thoughts on what influenced them to work in the remote nursing workforce;
- Involvement working with graduates from the school of nursing;
- Thoughts on what they considered would influence graduates decision to work in the Kimberley.

Participant group 3 nurse managers data collection.

Data collected from participant group 3, used a semi-structured interview and emails. The following points were discussed with participants:

- Positions available to new graduates within the Kimberley healthcare

workforce;

- Experience/level of education required of graduate's employment;

- Incentives to attract nurses to the workforce;

- Influences that could affect a graduate decision to remain in the Kimberley.

Archival documents.

The documents studied included: annual reports, curriculum papers, student handbooks, a recruitment audiovisual DVD from WACHS, and WACHS workforce recruitment data. Information in the documents included: education delivery strategies, student numbers, graduate numbers, and other events that added depth and multiplicity to the context of the study. Data collected also provided insight into: the School of Nursing, the participant's reasons for working in a hospital in a remote area following graduation, the context of their responses, and the factors that influenced the graduates decision. These data collection techniques assisted in preserving the integrity and reliability of the study findings (Merriam, 2009; Schwandt, 2011; Yin, 2009).

Evidence from the initial research question to case study conclusions, were documented in an electronic journal stored in an Ipad and backed up on the researcher's computer. The journal was organised into categories and included an annotated bibliography of events and documents reviewed. It clearly documented in chronological order, notes, including the date, time and condition, under which the data was collected. This process was designed to enable an audit of the data collection process and address the issue of trustworthiness and credibility (Guba, 1981; Yin, 2009).

All data was stored in an electronic database in the researcher's home. Folders were clearly labelled identifying: notes, documents, questionnaires, and interview transcripts. It was essential that the data were kept in order, with clear evidence showing the links between questions asked, data collected and the conclusions drawn (Yin, 2009). The database provided a formal assembly of evidence, distinct from the final conclusions, which could be used in an audit trail by other researchers for further exploration.

Analysis of data

In qualitative studies the researcher is the primary instrument for data collection and analysis (Merriam, 2009). Moreover, analysis and collection of data is a continuous iterative process until the point of saturation is established (Dierckx de Casterlé, Gastmans, Bryon & Denier, 2012; Miles et al., 2014; Speziale & Carpenter, 2007).

Demographic data was collated from each questionnaire and entered into Microsoft excel; an electronic spreadsheet program (http://microsoft-excel.en.softonic.com). Although the data collected in this study was qualitative, it was necessary to identify some basic facts from the demographic data. The spreadsheet enabled the data to be analysed, stored and organised. It contained all data from each set of participants and included: participant's assigned confidential code, all elements of demographic information and answers to all questions (Appendix O provides a sample of the spreadsheet from Group 1 and 2 participants). The spreadsheet enabled the researcher to gain a holistic view of the participant data and discern emerging patterns consistent with analysis of qualitative data.

A step-by-step process was undertaken in analysing the data collected from the interviews. Initially the researcher listened to the audio recording of each interview to establish a holistic understanding of the participant's perspective. Transcription of the interviews occurred as soon as practical, and were read several times to discern the participant's perspective. This process was repeated several times in search of patterns, insights or concepts to find the essence of the participant's responses to the researcher's questions. The researcher reflected on the transcripts and manually scored key phrases of the participant's story. This preliminary interpretation assisted the researcher to conceptualise the data, which has been recommended as a preparatory phase of data analysis prior to the coding process (Dierckx de Casterlé et al., 2012).

Coding is the process of "symbolically assigning a summative, salient, essence capturing, and/or evocative attribute to a portion of language-based, or visual data" (Saldana, 2013, p. 3). Codes allow for cross checking and grouping large

amounts of data. They are markers that assign representative meaning to the data collected (Miles et al., 2014). Coding is recommended as the first step in pattern detection, categorisation and theme building. The analysis of data and coding process in this study utilised the framework designed by Miles et al., (2014). This framework is illustrated in Figure 4.4.

First cycle coding (In Vivo coding)

Revising and comparing codes

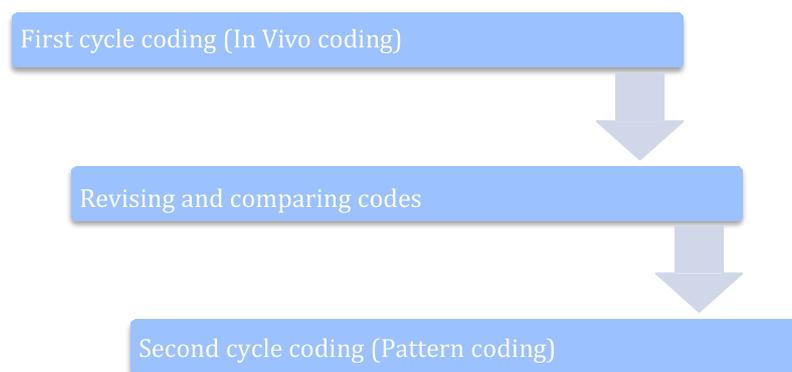Second cycle coding (Pattern coding)

Figure 4.4 Coding and analysis framework (Miles et al., 2014).

Figure 4.4 displays the sequence of events that were undertaken in coding the data. It was heuristic in that the codes were discovered through careful reading and reflection, which allowed time to develop meaning and understanding of all aspects of the data. The researcher highlighted words and phrases in each section of data in an attempt to capture the essence of the participant's stories. The codes were assigned labels that had relationships with the proposition and research question.

During the transcription process, common topics started to become evident after the first three interviews, which enabled the coding process to commence. Using codes enabled chunks of interview transcripts to be categorised to assist with analysis. This In Vivo coding process prioritised and honoured the participant's voice (Miles et al., 2014). Initially, coding was undertaken using a table in a word document, but as the researcher became more confident, the coding process was transported to a computer software package.

The software package, NVivo10 (QSR International, 2014), assisted in the management of data and supported the analysis (Bazeley, 2013). The software enabled data to be collected, assigned codes, and later retrieved to be revised. The

codes were listed and assigned a number for backtracking to transcripts. Using the software, codes were exported into a word document to facilitate analysis (see Appendix P).

Cognisant of the research question, words and/or short phrases that captured potential answers from participant's transcripts were highlighted, and coded in the first cycle of coding (Miles et al., 2014). Codes have been defined as "essence capturing" and when they share characteristics they form categories (Saldana, 2013, p. 3). Codes were analysed and grouped using a pattern coding process (Miles et al., 2014). The researcher was immersed in the data and used her tacit and intuitive sense to undertake this process (Saldana, 2013). It enabled data to be categorised and themed with the aim of forming a structured and coherent pattern of similarities and variations in factors that influenced the graduate's decision to work in the Kimberley. The researcher made every effort to seek rival or alternative explanations to the study's proposition by checking data with her supervisor and other nurses in the field of remote nursing. There were 16 transcripts that produced 95 first cycle codes from participant group 1. The initial codes were then further refined and collapsed into three categories.

A similar process was applied to the data collected from the second and third participant groups. Data from the nursing workforce became repetitive after the eighth transcript. It was deemed beneficial, however, to analyse a further three for additional codes, but this process proved unsuccessful. Only three nurse managers were available for interview so all transcripts were coded as well as information received through email communication from two other nurse managers.

Data from documents, journal and DVD

Analysis of the Kimberley nursing workforce employment statistics and recruitment and retention strategies added further to the context of the case. It also provided additional points for discussion with the participants. The audio from the Kimberley health workforce promotional DVD was transcribed and analysed providing material to compare and contrast from the finding of the graduate's responses. Answers provided in the questionnaires were also coded and stored in the

study's database as well as being catalogued in the researcher's journal.

Summary of analysis process

Chronological journaling recorded the researcher's thoughts, evolving interpretation of evidence, insight and connections between data and preliminary analysis (Yin, 2009). The research journal was vital for keeping track of the evidence, alternative theoretical propositions and for ongoing analysis and interpretations. The notes and interpretations were substantiated with other evidence from interviews, or documents and were reviewed by the researcher's supervisor to lessen the risk of the researcher's personal bias contaminating the analysis.

Additional, interpretations were compared with other evidence either from interviews or documents to assist in maintaining the trustworthiness of the data (Koch, 1994; Long and Johnson, 2000; Streubert and Carpenter, 2011). Perceptions of the graduates and staff were linked to the documents and reports with theme matching based on the theoretical proposition. This iterative process of collecting, coding and analysing data was undertaken throughout the study. The data was triangulating by looking for contradictions, inferences, convergence and supportive evidence to the emerging themes (Yin, 2014). From this analysis overall themes emerged that revealed the factors that influenced students to work in a Kimberley hospital. By aligning the codes from the interview, combined with evidence from the questionnaires, documents and the researcher's journal, broad themes emerged. The findings of this process are elaborated in the following chapter.

Rigour/Trustworthiness

As this study used multiple sources of data, both rigour and trustworthiness of the findings were essential. In qualitative research the term trustworthiness is used to describe the strategies used to ensure findings can be trusted (Speziale & Carpenter, 2007). The operational terms that describe this process are credibility, dependability, confirmability and transferability (Lincoln & Guba 1985).

Credibility

The researcher had prolonged engagement with the phenomenon, which could be considered evidence of credibility (Speziale & Carpenter, 2007). Although the researcher was situated within the context of the study there was no direct personal influence on the graduates in their decision to stay or leave the Kimberley healthcare workforce. Intimate involvement in the context of the study, however, could be interpreted as a personal bias. Reflexivity and dialogue minimised any potential bias. The following steps were undertaken to demonstrate credibility and achieve neutrality: personal and professional values in collecting and analysing data were evaluated with the researcher's supervisor, the supervisor checked journal entries and processes used in analysing the data and participants were provided with a copy of the transcripts to check for accuracy (Baxter & Jack, 2008; Stake, 1995; Yin, 2014).

Dependability

One of the advantages of amassing data from various sources is that triangulation can occur. This process was undertaken by juxtaposing the data to determine the consistency of findings (Speziale & Carpenter, 2007). As alluded to in the data analysis section, all data was synthesised into final themes, which addressed the research question and will be described in the following chapter.

Confirmability

The researcher systematically recorded and managed data in order to leave an audit trail for another individual to follow (Anthony & Jack, 2009; Brown, 2008; Patton, 2002; Speziale & Carpenter, 2007). This process was especially important in addressing the potential bias of the researcher.

Transferability

The concept of transferability refers to the possibility that the findings will have relevance to others. Moreover, exploring nurses' sources of knowledge has relevance across many practice settings (Estabrooks, Rutakumwa, O'Leary, Profetto-

McGrath, Milner, Levers, & Scott-Findlay, 2005). This concept will be addressed in the limitations and recommendations of the study in the final chapter of the thesis.

Ethical considerations

While this study had minimal risk for ethical concern, it was still important to consider the ethical rights of the participants during the development and subsequent conduct of this study. The greatest ethical concern was the relationship between the researcher and the participants. The existence of power differential was acknowledged, as the researcher is the Assistant Dean of the Broome School of Nursing and Midwifery. The researcher, at the time of this study, had also worked within the Kimberley healthcare workforce and had developed a level of rapport with all participants. It was essential to assure the participants that the study would take place outside the researcher's academic position, since it has been argued that a hierarchy exists in any research process between the researcher and the participant (Seidman, 2006). To this end the researcher undertook data collection during six months sabbatical.

Being conscious of the likely effects of the researcher position within this study was the first step towards ensuring a process of a balanced relationship with the participants and increased the trustworthiness of the study. Developing a partnership with the participants, asking permission, and using clear communication skills to build trust also assisted with resolving possible bias. Questions for the interviews were aimed at developing rapport and encouraging participants to share their experience, rather than the information being driven by questions (Seidman, 2006). Part of the interview process included informing the participants that information gathered would be used for purposes of the study and would have no bearing on future studies, or employment prospects. All participants were given opportunity to review their transcripts, to add comments, make corrections or withdraw from any statement (Rubin & Rubin 2012; Seidman, 2006).

The consent form outlined the rights and responsibilities of the participant and the researcher. Participants were informed that they were under no obligation to participate in the study. Interviews took place at sites and times mutually convenient

to both researcher and participant. Sites included the Notre Dame library both in Broome and Fremantle, participant's homes, community libraries, together with conducting interviews by telephone. The participant performed the lead role in determining these arrangements and the researcher paid the small fee required for the community centre locations.

All data gathered was identified in a way that assured confidentiality. Meeting times were private and once coded the data was recorded in a spreadsheet and cross- coded with the participant's contact details. This spreadsheet was stored securely in accordance with Notre Dame Policy: Code of Conduct for Research (Appendix Q) in a password-protected Ipad and backed up on the researcher's password protected computer. At the completion of the study all participant data inclusive of field notes and memos were stored securely at the Notre Dame, Broome School of Nursing and Midwifery for a period of 5 years. To ensure confidentiality the researcher and her supervisor were the only people permitted access to the data.

The Deputy Vice Chancellor and the Dean of Nursing and Midwifery provided access to the School for data collection purposes. The University of Notre Dame Ethics Committee and the WACHS Research Ethics Committee provided ethics approval. Permission to access student information and archival records was sought and approved by the Reporting and Statistics officer at Notre Dame.

Conclusion

This chapter outlined the approach used to explore and describe the factors that influenced the graduates' decision to work in a Kimberley hospital. A single exploratory descriptive case study was seen as the appropriate method of understanding and answering the research question. In keeping with the method the boundaries were set with data being collected from various sources including the graduates, workforce nurses, nurse managers, archival documents and a promotional DVD. Both questionnaires and interviews were used to collect data. Questionnaires were either in hard copy or electronic format and interviews were conducting face to face or by telephone. Data was analysed using a thematic analysis approach. The chapter concluded with the issue of rigour and ethical consideration being discussed2