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The identification of the role and competencies of the graduate nurse in recognising and responding to the deteriorating patient in an acute ward environment: A mixed methods study

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Chapter 3

Methodology

Introduction

The previous chapter provided a synthesis of the current literature relating to the problem of clinical deterioration and the role of the graduate registered nurse. This chapter provides a discussion of the mixed methods research (MMR) approach used in this study, together with the rationale for using an explanatory design. Since the philosophy of pragmatism underscores MMR, a brief synopsis will be provided to elucidate its relationship to the study aims. The chapter will outline the study design and its four sequential phases.

Overview of Mixed Methods Research

Research designs are processes and procedures used for the collection, analysis, interpretation and reporting of results from a research project, or study, providing a logical choice of methods used and the procedures followed, in the collection and interpretation of data (Creswell & Plano Clark, 2011). The nature of nursing requires the use of intellectual pluralism, the collection and use of objective and subjective data to provide clinically appropriate holistic care to the patient.

No single view of reality can explain the complex phenomena that occur within the clinical environment when providing patient care. As such a MMR design reflects the overarching pragmatic philosophy of nursing practice and its pluralistic nature. It places value on both objective and subjective data since both are necessary to part way explain complex phenomena that characterises nursing practice.

A mixed methods design was necessary to answer the complex research questions posed in this study. Using a mixed method design facilitates the capture of insights that may be missed when only one method of inquiry is used. It has been argued that mixed methods research provides a more complete level of knowledge to inform theory and practice by increasing the comprehensiveness and scope of the findings (Creswell & Plano Clark, 2011).

Given the complexities of the aim of the study, a practical and applied research philosophy informed the methodological choice of MMR and the development of the research questions (Teddlie & Tashakkori, 2003). Proponent of MMR suggest that a broader focus on the phenomenon can be provided since it uses information obtained from a number of different perspectives to answer the research questions (Giddings & Grant, 2006). Importantly, MMR design acknowledges the importance of context (Greene, 2008). The background and context to this study was portrayed in chapter one.

Whilst there is debate about using both quantitative and qualitative methods in a single study, it is argued that researchers should not be forced into a choice of using either post-positivism or constructivism (Tashakkori & Teddlie, 2003). Mixing methods from different paradigms should not be viewed as polarised, but rather different ends of the continuum (Newman & Benz, 1998). Whilst issues of compatibility of qualitative and quantitative methodologies have been widely discussed there is growing acceptance of the value of mixed methods in addressing complex health problems (Bryman, 2007; Guba & Lincoln, 1988; Morgan, 2007; Twinn, 2003; Yancher & Williams, 2006). The problem of the deteriorating patient is one such problem.

It was felt that a MMR design complemented the pluralistic nature of nursing, promoting the collection, synthesis and abduction of data; contributing to a more complete and comprehensive account and understanding of the deteriorating ward patient (Doyle, Brady & Byrne, 2009). Moreover, this design supported the overall aims of this study ensuring a complete multidimensional explanation and illustration of the topic (Bryman 2006). Importantly, the use of a MMR design enabled a

comprehensive collection and synthesis of both quantitative and qualitative data to represent the GRN's perceptions of the management of the deteriorating ward patient. Rigorous empirical evidence will provide the platform to inform decisions and actions within the clinical context. The evidence will ensure that future clinical actions are appropriate, cost effective and result in a positive outcome for patients (Polit & Beck, 2012).

The partially mixed methods explanatory design.

It is argued that mixed methods research falls on a continuum from not mixed to fully mixed methods, with partially mixed designs occupying the region in between (Leech & Onwuegbuzie, 2007). Fully mixed methods designs represent the highest degree of mixing of research methods and research paradigm characteristics. This level of mixing involves both qualitative and quantitative research characteristics across the four components of research; objectives (including exploration and prediction); data collection; data analysis and inference (Leech & Onwuegbuzie, 2007).

A partially mixed method, explanatory sequential design was used in this study, commencing with a quantitative phase, followed by a qualitative phase. It was envisaged that the qualitative phase could provide further explanation of the quantitative findings, allowing for a more in depth exploration and explanation of the phenomenon under study (Creswell & Plano Clark, 2011). It is understood, however, that MMR explanatory design does not predict outcomes (Leech & Onwuegbuzie, 2007). Rather, it is viewed as useful in assessing trends and relationships within quantitative data, and explaining the reasons behind the trends with qualitative findings (Creswell & Plano Clark, 2011).

A partial mixing of methods was vital in facilitating a clear comprehension of the current practice of the GRN in managing the deteriorating ward patient. The explanatory design was chosen to help identify trends within the GRNs role when dealing with the deteriorating patient, identifying important key clinical competencies and level of working undertaken to provide a mechanism to explain these trends. The design offered a unique means of collecting data from the participants that was

pluralistic and context focused. It facilitated the collection of data concerning the GRNs preparation, technical role, decision-making and levels of working, whilst focusing upon the context of a new GRNs role. The combination of data types helped to identify the multiple factors that influenced their capabilities to recognise and manage the deteriorating ward patient. An explanatory sequential design provided a depth of understanding that would have been difficult to achieve using quantitative or qualitative methods in isolation (Shaw, Connelly & Zecevic, 2010).

The philosophy of pragmatism.

Mixed methods approach to research is underpinned by the philosophy of pragmatism (Creswell, 2009; Morgan, 2007; Tashakkori & Teddlie, 2003). It is a doctrine of meaning: a theory of truth arguing that acceptance of truth and knowledge are dynamic and evolving: there is no final truth (Denzin, 2012; Johnson & Onwuegbuzie, 2004). Instead, truth is seen as incremental in that a person accepting the truth of today may be proven false tomorrow (Doyle et al, 2009). The findings of research are tentative, leading to further action and practical outcomes (Johnson & Onwuegbuzie, 2004). Pragmatism suggests that knowledge comes from action and the reflection on the consequences of that action. It advocates an eclectic approach to research, where the researcher is free to determine the methods that best suit answering the research questions (Doyle et al, 2009). Thus, the use of a MMR approach in this study satisfies these criteria.

The Deweyan form of pragmatism argues that people interact with their environment by taking action, which is termed ‘transaction’. The actions create a change in the environment, creating consequences. The distinctive characteristic of the transaction is that it constitutes a two-way relationship, where actions affect consequences, and consequences affect actions (Dewey, 1987). Pragmatism argues that knowledge and ‘knowing’ can only come from the transaction. Experience in and of itself is, contextually and temporally driven, allowing multiple standpoints, backgrounds, histories, and intentions, contributing to unique transactions. Pragmatists believe that an objective physical reality can be tapped into through context driven transactions. Importance is placed on subjective realities, formed within the

individual's mind and inter-subjective worlds, created through communication, interaction and sharing (Onwuegbuzie, et al., 2009).

Grasping the relationships between actions and consequences, enables the person control over their environment, so they can plan intelligently in directing further actions. It is the action and reflection on the consequences of the action that leads to 'knowing'. Learning occurs through the process of guided experimental transaction (Biesta, 2010). Thinking can allow for a rehearsal of competing possible lines of action; leading to coordinated transaction that is clear when a person acts (Beista, 2010). Thinking, however, can never guarantee actions will result in coordinated transaction, it can only help to make the process of choosing more intelligent. Action is needed along with careful examination of the consequences, to establish what is possible (Biesta, 2010). From this perspective experience involves a process of interpretation.

The philosophy of pragmatism is concerned with concepts such as 'lines of action, warranted assertions and workability' (Morgan, 2007, p. 66). It is concerned with answering research questions that affect the real world and fits well with research used to enlighten clinical practice (Plack, 2005). It concentrates on the practical nature of reality, discovering an ever-evolving truth in finding the solution to problems (Shaw et al., 2010). Thus, the aim of this study is to identify the role and competencies of the GRN when managing the deteriorating patient.

Pragmatism permits a more comprehensive approach to social research within the clinical context of nursing by advocating the use of multiple methods of inquiry. Using this approach, complexities can be explored providing relevant and meaningful practice-based evidence to inform nursing practice (Shaw et al., 2010). Pragmatism accepts that there are single and multiple realities that are open to empirical inquiry and that phenomena have a variety of layers, both objective and subjective, or a combination of the two (Creswell & Plano Clark, 2007). Thus it can be seen how pragmatism underscores the use of a MMR approach and an explanatory design.

Pragmatism is based upon the argument that meaning of an event cannot be given in advance of experience. Emphasis is placed on the consequences and meaning of actions. According to Dewey (1987), pragmatism is concerned with human experience and experience is built around key aspects of beliefs and actions. The origins of a person's beliefs arise from prior actions and the outcomes of those actions. These interpretations are context driven and related to feelings. The whole process leads to experience and knowledge generation (Dewey 1987).

A Deweyan philosophy of pragmatism asserts that knowledge is generated from actions as outcomes of inquiry and this serves as a basis for beliefs. There is an emphasis on the continual interaction between beliefs and actions and that these interactions are context driven. As such it was important to inform the reader of the background to the study, including the researcher's location within the study since the researcher's experiences could influence the pragmatic decisions made and the research process. Pragmatism advocates an eclectic approach to research where the researcher is free to determine the methods that best suit answering the research questions (Doyle et al, 2009).

Pragmatism focuses upon the consequences of research and the importance of the question asked, rather than the method used. It is directed towards what works in the practice setting (Creswell & Plano Clark, 2011). Hence, in this study the MMR design aimed to provide a more in-depth view of the GRNs' role and competencies in the management of the deteriorating ward patient.

Research design

This study used a MMR explanatory design that required the collection and analysis of quantitative data and qualitative data. Four distinct phases in the study reflected the sequential nature of the design (see Figure 3 below).

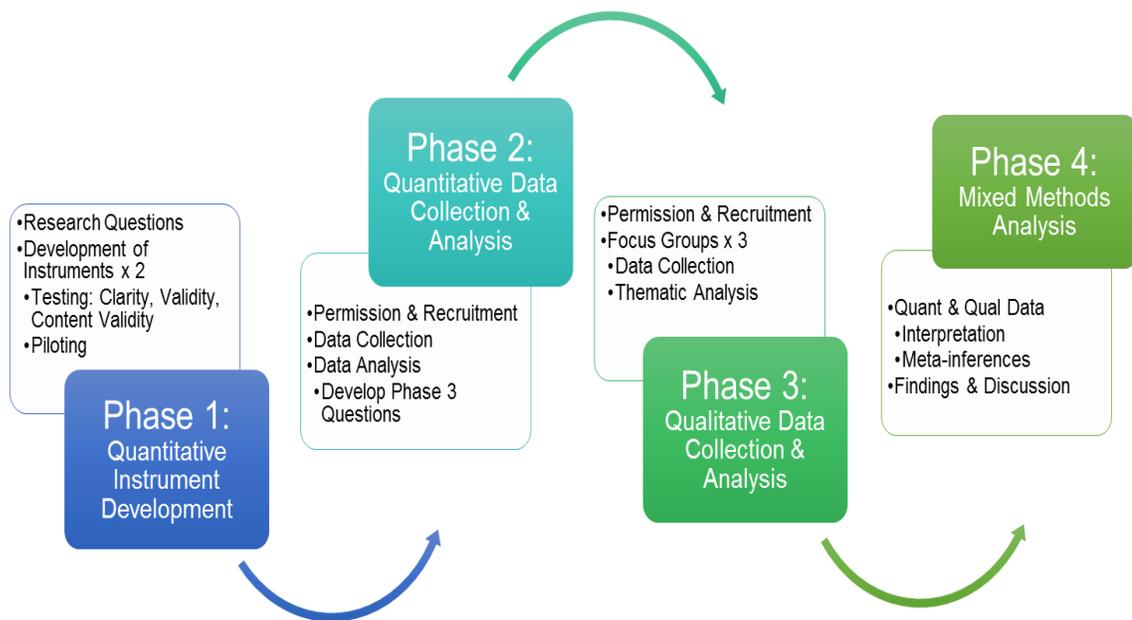


Figure 3. Phases of the study and sequential mixed method design.

Phase 1.

Phase 1 of the study focused on the development and testing of two online quantitative questionnaires. The first questionnaire concerned the role of the GRN (Q-Role) and was designed to gather data from the GRNs concerning their current clinical role in the management of the deteriorating ward patient. The Q-Role also focused upon data relating to: the problem of clinical deterioration; knowledge levels of the GRNs; confidence levels of the GRNs; clinical support; and preparation of the GRNs to undertake their current role in managing the deteriorating patient.

The second questionnaire concerned the competencies (Q-Comp) required to undertake the role of managing the deteriorating patient. It was designed to identify the acute care clinical competencies used by the GRNs when managing the deteriorating ward patient. The Q-Comp also measured the level and complexity of work undertaken by GRNs in their current role. The development of the questionnaires

was complex, involving a number of processes to ensure clarity, validity and reliability. This process led to the questionnaires being subdivided into four parts, to improve engagement and reduce survey fatigue of the participants.

Phase 2.

Phase 2 of the study involved the quantitative data collection and analysis for the study. Phase 2 initially focused on gaining permission to undertake the data collection, followed by the recruitment of GRN participants for the study. Following the recruitment process, the four parts of the Q-Role and Q-Comp questionnaires were distributed to the GRN participants in a sequential manner, via an online survey hosting website. The questionnaires were completed and the data was collated for statistical analysis. A number of descriptive statistical analyses were undertaken using the SPSS™ Ver.24 (IBM SPSS, 2016) statistical analysis software package. The findings from the data analysis were then used to inform the development of the questions to be asked in the qualitative phase 3 of the study.

Phase 3.

Phase 3 of the study involved the qualitative data collection and analysis for the study using three focus group interviews with GRN participants. Again phase 2 initially required permission from both private hospital and public hospitals where the focus groups were to be undertaken. Once permission was granted, the GRN participants were recruited for the focus groups, and these were then undertaken over a period of several months. The questions used to guide the focus groups were developed following the analysis of the quantitative data. The focus group interviews were recorded and then transcribed. A process of thematic analysis was then undertaken to identify key themes from the qualitative data.

Phase 4.

Phase 4 formed the final phase of the study. This phase involved an in depth synthesis of both quantitative and qualitative findings and meta-inferences from the

data. It provided key findings of the study that answered the research questions and facilitated the provision of recommendations from the study.

Ethical considerations

The study was conducted cognisant of the National Statement on Ethical Conduct in Human Research (NHMRC, 2015). The main purpose of this National Statement was to promote ethical human research ensuring participants are accorded respect and protection (NHMRC, 2015). In meeting the NHMRC standards, this study underwent a number of ethical approval processes, ensuring that issues of consent, protection of confidentiality, risk of harm were addressed.

Ethical Approval Processes

Initially, the research study proposal was assessed and accepted by the University of Notre Dame Australia, (UNDA) Human Research Ethics Committee (HREC). It was deemed a Low Risk Project Involving Human Participants, as the study did not involve patients, clinical practice, provision of treatment, the use of medication or other substances. Furthermore, there was no potential risk or actual physical harm to participants within the study (see Appendix 1). As the study involved undertaking focus group interviews with GRN within both private and public hospitals, ethical approval was also sought and provided by their ethics committees (see Appendix 1).

Confidentiality & Data Security

Confidentiality and data security during the study was provided in a number of ways. All electronic data collected during the quantitative phase was anonymous, names of participants were not collected at any time during the data collection phase. All demographic data was generic, chosen from broad demographic categories such as area of speciality or age groups, to reduce the risk of participants' identification. Additionally, the researcher and supervisor of the study were the only personnel provided with access to quantitative data, which was stored in a secure location, on a password protected computer complying with data protection laws.

The focus group interviews were recorded on electronic devices and transcribed. The transcribed data was coded and anonymised to ensure participants and workplaces could not be identified. Following the transcribing of data, the recordings were erased. All transcribed data and consent forms were stored in a secure location, the electronic data was also kept on a password protected computer complying with data protection laws.

All printed data from the phases of the study will be kept in a secure location at the university for a period of five years. Following this period, the printed data will be destroyed in a safe and confidential manner in accordance with the university protocols.

Summary

This chapter has provided an overview and rationale for the use of a MMR explanatory design of the study. It discussed the philosophy of pragmatism, which underpins the MMR approach and was deemed to fit the research questions. The chapter also has provided a brief overview of the four phases involved in this study portraying the sequential nature of the design. Finally, the chapter has provided a discussion of the processes undertaken to assure ethical approval and confidentiality.