TITLE:

Uncovering the evidence of non-expert nephrology nursing practice.

Short Title:

Non-expert nursing practice

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ABSTRACT

Expertise in nursing has been widely studied although there have been no previous studies into what constitutes expertise in nephrology (renal) nursing. This paper, which is abstracted from a larger study into the acquisition and exercise of nephrology nursing expertise, provides evidence of the characteristics and practices of non-expert nephrology nurses. Using grounded theory methodology, the study took place in one renal unit in New South Wales, Australia and involved 6 non-expert and 11 expert nurses. Sampling was purposive then theoretical. Simultaneous data collection and analysis using participant observation, review of nursing documentation and semi-structured interviews was undertaken. The study revealed a three stage skills-acquisitive process that was identified as non-expert, experienced non-expert and expert stages. Non-expert nurses demonstrated superficial nephrology nursing knowledge and limited experience; they were acquiring basic nephrology nursing skills and possessed a narrow focus of practice.

KEYWORDS:

Grounded theory, renal, expertise, novice

INTRODUCTION

In response to the complex health care required for people with renal failure nephrology nursing has evolved as a distinct specialty area of nursing¹. The specialty encompasses a number of subspecialty areas including general nephrology, haemodialysis, peritoneal dialysis and renal transplantation units². The depth to which individual nephrology nurses engage in the scope of nephrology nursing practice is dependent upon several factors: their educational preparation, experience, role, professional aspirations, health care setting, and the nature of the patient group(s) they serve³.

At present there are three models of skills acquisition. The first model to explain the acquisition of expertise was described by Fitts and Posner in 1967⁴. According to them, learning new skills involves integrating new skills with those already learned, so that over time each phase merges gradually into another until the individual can perform each new skill automatically. The second model is better known to nurses. Benner's research on nursing expertise applied and adapted the Dreyfus⁵ brothers' model of skill acquisition. In applying this model of skill acquisition to nursing, Benner was able to identify the key features of a nurse who was practicing at a particular level within the model. Benner⁶ suggests that nurses pass through five levels of competence in clinical nursing practice: novice, advanced beginner, competent, proficient and expert.

The third model attempts to explain the acquisition of medical expertise. Schmidt, Norman and Boshuizen⁷ proposed a 4-stage theory in which medical students progress through several transitory stages and that knowledge is gained over time and is available for future use when the situation demands its activation. However, none of the three models adequately explain expertise acquisition and this prompted the impetus for this present study.

Benner's⁶ seminal work has been largely responsible for triggering further nursing research into expert nursing practice⁸⁻¹² but expertise acquisition in nephrology nursing has

not been previously studied. Grounded theory method uses a systematic approach to developing substantive theories which can account for human behaviour. By developing theory grounded in data, the researcher seeks to explain the basic social process experienced by a group of participants interacting in a particular context or setting^{13, 14}. One of the major uses of grounded theory has been in exploratory and descriptive studies^{13, 15, 16}. Grounded theory provided an appropriate means of researching nephrology nursing practice, in order to uncover the acquisition and the essence of expertise.

Aims of the study

This paper is drawn from a larger study which sought to understand the characteristics of nephrology nursing expertise and the process through which it was acquired; and, to explain how non-expert nephrology nurse practice differed from that of expert nephrology nurses.

METHODS

This study was conducted in one renal unit in New South Wales, Australia, which consisted of several in-patient and out-patient areas. Acute and chronic renal replacement services including renal transplantation and home training facilities for haemodialysis and peritoneal dialysis patients were provided by this unit. Existing literature on expert practice assisted with the development of participant selection criteria^{6, 17-19}. The criteria included length of nephrology nursing experience, formal nephrology nursing postgraduate education, personal characteristics, perceived level of practice and whether nursing peers recognised them as an expert nurse. Nurses, who agreed to participate in the study, were identified by a peer nursing panel as either experts or non-experts. Using purposive then theoretical sampling a total of 17 nurses were studied, consisting of six non-experts and eleven expert nurses; all but one was female.

Ethical Approval

Ethical approval was obtained from university and health institutional ethics committees. Nurses who worked permanently in each of these areas were invited to participate in this study. Written informed consent was obtained from each participant prior to the commencement of data collection. Verbal permission from patients who were receiving nursing care during observation episodes was also obtained.

Data Collection and Analysis

Consistent with grounded theory methodology data collection and analysis proceeded simultaneously. Data were collected over a nine-month period, and consisted of a total thirty-two episodes (103 hours) of participant observations, thirty-seven (24 hours) of interviews, and ten episodes of nursing documentation (report writing and charting). In this study observations occurred on various shifts spread across the entire week and in all renal areas. Observational or field notes were recorded in the presence of the participant and handwritten into a notebook. Following each observation, participants were interviewed using a focused, open-ended interviewing technique to gather data concerning the participant's perspective of their practice. Questions were generated from field notes and sought rationales for nursing actions. Interviews were conducted in a private office located near the ward and were audiotaped for subsequent verbatim transcription. Patients' notes and charts were reviewed only during an observation period.

In keeping with grounded theory research, analysis of data followed each data collection episode using the processes of substantive and theoretical coding^{13, 15}. A line by line analysis of the data was undertaken initially and this resulted in many codes, some of which were 'in-vivo' codes; that is, codes that reflected the actual words or actions of the participants. Gradually, as more data were collected and analysed, it became apparent that

there were similarities in the practice of non-expert nurses and these codes were subsumed into categories. Properties (characteristics) of each non-expert category began to emerge as concurrent data collection and analysis proceeded.

Simultaneous with the emergence of non-expert categories and their properties, data were collected from expert nephrology nurses in order to identify categories and properties specific to that group of nurses. It became clear that the level of abilities and depth of knowledge of the expert group were in marked contrast to those of the experts. This finding enabled confirmation of the shape or dimension of each non-expert category. QSR NUD*IST assisted with data management.

FINDINGS

The goal of this study was to gain an understanding of the acquisition and exercise of nephrology nursing expertise. A three-stage process consisting of four interrelated characteristics was revealed²⁰. The stages were conceptualized as non-expert, experienced non-expert and expert; the characteristics as knowledge, experience, skill and focus. The purpose of this paper is to examine the first stage of this process and provide evidence for non-expert nephrology nursing practice.

Non-expert nephrology nursing practice was characterized by *superficial nephrology nursing knowledge, limited experience, acquiring basic nephrology nursing skills and narrow focus of practice*. The ability of non-expert nurses to practice nephrology nursing was restricted by their lack of nephrology nursing knowledge and their limited experience.

The first characteristic of non-expert nurses was that they possessed *superficial knowledge* about nephrology nursing practice. Depth of knowledge, in this study, relates specifically to domain or specialised nephrology nursing knowledge used by nurses to support their practice. When nurses begin to practice they also have only a superficial knowledge on

kidney diseases and their nursing management. Non-expert nephrology nurses have also had only a minimal number of encounters with people who have a renal disorder or who require renal replacement therapy. Superficial nephrology nursing knowledge was further explained by two dimensions related to non-expert nurses' knowledge base. These dimensions were that non-expert nurses relied on [their] general nursing knowledge and, as a consequence of having superficial nephrology nursing knowledge, could provide only sketchy rationales for practice.

My CAPD knowledge is minimal. I do explain [to the patient] ... [but] one of their questions was, how long does the [PD] catheter actually stay in the patient. And I wasn't sure if it was a life long thing with the catheter or if it needed to be changed so I asked [the patient] to ask the CNS . (Helen)

A result of possessing only superficial nephrology nursing knowledge, the non-expert nurses frequently provided sketchy or insufficient rationales for their practice. During interviews, following each observation episode, nurses were asked about their actions. Non-expert nurses attempted to provide a sound explanation for their actions but these answers invariably were wrong or revealed knowledge gaps. For instance, Rose, while providing nursing care for a patient who had had a renal biopsy, followed the protocol for monitoring vital signs. On being questioned, Rose stated that vital signs were taken to monitor for haemorrhaging. However, she did not know why she needed to take the vital signs so frequently or why, in particular, a patient could haemorrhage following a renal biopsy.

Limited experience was the second characteristic identified in the practice of non-expert nurses. Non-expert nurses were continually faced with situations in which they did not have any experience and were unfamiliar with what was required of them. Cannulation of a fistula

was a typical example of a situation in which non-expert nurses needed to gain significantly more experience. They were only allowed (by expert nurses) to cannulate “easier” fistulae before moving onto cannulating increasingly more difficult ones. Judy remarked during an observation period that she would not cannulate the next patient as he has a new fistula and “no one has been allowed to cannulate him except an expert nurse” (Judy). Later, during the subsequent interview, Judy explained the reason why she was not allowed to cannulate that patient’s fistula. “I haven’t cannulated a brand new fistula as I don’t have enough experience” (Judy).

Non-expert nephrology nurses felt incompetent when they were confronted by situations with which they had no prior experience. For these nurses, dealing with situations in which they have little or no previous experience, together with a lack of specialised knowledge, makes working in nephrology nursing stressful and at times frustrating.

[A patient] was saying she was feeling unwell but she couldn't actually pinpoint the problem, she wasn't sure if she was feeling dizzy or feeling light headed, she was just wasn't sure, and I felt a bit frustrated at that time in a sense ...because I didn't know what question do I ask (Jody).

Acquiring basic nephrology nursing skills was the third characteristic of non-expert nursing practice. In this stage of the acquisition and exercise of expertise, the non-expert nurse was developing and refining specialised nursing skills. Skills development of nurses was influenced by both the extent of knowledge and experience which non-expert nurses possessed. In order to acquire basic nephrology nursing skills, non-expert nurses needed to develop psychomotor skills which had not been present previously. Examples of new

psychomotor skills were cannulation of fistulae, performing haemodialysis or peritoneal dialysis treatment and providing nursing care to renal transplant recipients.

Non-expert nephrology nurses' skillfulness was developed as they mentally rehearsed procedures before undertaking them; seeking confirmation and support from more experienced nurses when undertaking unfamiliar nephrology nursing skills; and they were frequently being told what to do by more experienced or expert nurses.

I will ask somebody to observe me until I get a bit more experience with [removing central lines], just so that I know that I'm doing everything correctly...confirming that I'm on the right track and especially with things that you are not very sure of, you know, you want to always double check just to make sure that you are on the right track. (Mary)

Non-expert nurses, generally, when they were *being told what to do* by more experienced nurses, accepted this practice in a positive way. They believed that *being told what to do* was both helpful and supportive during a shift. According to Judy:

A lot of the time, especially when I first started, I was working a lot with [a senior nurse]. She told me what to do, guided me and that helped a lot".

Although non-expert nephrology nurses believed that the focus of their attention was on the patient, it became apparent during observational data collection that their focus was clearly on trying to complete essential nursing tasks. All nurses in this study were questioned about the focus of nursing care which they had provided during an observation episode. Non-

expert nurses typically described their focus of attention as being devoted to completing tasks and managing their workload (i.e., time management). In addition, their focus was narrow in relation to continuity of care. In contrast to other more experienced and expert nephrology nurses, non-expert nurses tended to concentrate only on a patient's current admission or problem and to view their nursing activities in terms of short-term goals or plans. Alexis revealed her focus as being:

Well [in the haemodialysis unit] it's interacting more with machines as well you've got that interaction with the patient but its a minimum (Alexis).

When questioned about their understanding about continuity of care and what it meant for their nursing practice, they invariably suggested that continuity of care lasted for a few days or for that admission to the renal unit. Even when prompted to consider that patients with renal failure often have a chronic illness requiring life-long treatment, non-expert nurses consistently described their focus of attention in terms of the present rather than the future.

With dialysis you can't look too far, you know, and it's day by day but with some of them you probably look at them in the future, well okay say today's Tuesday and then you think...will I leave his weight till [his next dialysis on] Thursday. But the focus is mainly a day to day basis (Alexis).

DISCUSSION

During the first stage of expertise acquisition, non-expert nurses had a limited understanding of and ability to practice in this specialised area of nursing. They were consistently being told what to do by more experienced nurses and their practice was not fluent or efficient; they

went backwards and forwards, backwards and forwards when trying to complete activities. Non-expert nurses revealed sketchy rationales for practice and they felt incompetent while working on the renal unit. They were also strictly task-focused. Non-expert nursing practice was consistent with the descriptions of individuals who are in the cognitive phase of skills acquisition⁴. These nurses had not had previous opportunities to acquire either domain-specific propositional knowledge or to proceduralize that knowledge. They relied on nursing knowledge and experience which they had acquired from elsewhere (e.g., undergraduate preparation, working on other wards) to apply in the context of nephrology nursing. Non-expert nurses were being told what to do by other nurses and deliberately sought out more experienced nurses to confirm that what they were doing was correct. This is also consistent with the novice stage of the Dreyfus model and the Schmidt et al. model⁵⁻⁷.

Non-expert nurses had limited nephrology nursing experience. This led them to be disorganized and inefficient. They expended more energy as they went backwards and forwards, backwards and forwards between tasks and felt incompetent in the way they practiced. These features of non-expert practice have not been explicitly identified in previous literature, although Benner, Tanner and Chesla²¹ describe advanced beginner nurses as anxious and concerned about their level of competence when dealing with complex situations.

This study provided evidence of a non-expert nephrology nurse's focus of attention. These nurses were task-focused because they had not yet learnt or developed adequate procedural knowledge to assist them to perform new tasks, or similar tasks in a new environment. There is considerable literature which suggests that novice nurses are predominantly task-focused^{22, 23}. Nurses with less experience in critical care nursing directed their attention to the performance of tasks or on equipment, rather than the patient²³. This study's findings on non-expert nephrology nursing practice concur with Little's study. Non-

expert nurses, when specifically asked about their focus of nursing, invariably indicated that completing the tasks and interacting with the dialysis machinery were central to their practice.

This study has several implications for nursing practice. Firstly, the acquisition of domain-specific knowledge from both formal educational programs and from experience in renal units was clearly required to practice as a nephrology nurse, for without it non-expert nurses were disorganized, frustrated and felt incompetent. In light of this finding, it is necessary to recognise the limited domain-specific knowledge of these nurses and to incorporate practice strategies to minimise the effects on both non-expert nurses and patients. Such strategies might include: more extensive orientation periods, particularly in highly specialised and/or technological ward environments; more effective utilization of more experienced and/or expert nurses as role models and mentors for a longer period of time (e.g., some nurses in some specialty areas may need up to twelve months of mentoring); and, ensuring that experienced and/or expert nurses are rostered onto every shift to provide constant support and guidance for inexperienced nurses²⁴. These strategies, while not new, clearly need increased recognition, support and a more vigilant implementation by senior nurse managers. In addition, making these supportive strategies available, non-expert nurses' stress, disorganized practice and feelings of incompetence would be reduced and, potentially, their motivation, enjoyment and commitment to nephrology nursing would increase. These strategies, it is suggested, could improve the retention of nursing staff in renal units as well as attracting new staff into the specialty.

Study Limitations

This study was designed to be exploratory, descriptive, and theory generating. The sample size, however, was small and the context confined to one renal unit which implies that the findings may not be fully applicable to other nephrology nurses, other renal units or more

widely in other fields of nursing¹⁶. The findings, however, can be verified as they provide a key reference point for other nurses wishing to examine the practice of non-expert nurses.

CONCLUSION

This study was the first to demonstrate explicitly the features of non-expert nephrology nursing practice which has not been reported in the literature. The findings of this study both support and add to nursing's existing body of knowledge with respect to expertise. This study is significant for nursing practice as it seeks to examine the influence of experience, specialist nephrology education and personal attributes on the acquisition of nephrology nursing expertise. The effect of these factors on expertise is not well understood in nursing and had never been studied previously in nephrology nursing. The results of this study could influence how nursing career paths will be developed and the role of clinically focused education courses.

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