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**TITLE:**

**The Acquisition and Exercise of Nephrology Nursing Expertise: A Grounded Theory Study.**

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**Author Responsibilities**

AB designed the study, collected and analysed the data, and took overall responsibility for its conduct while completing her doctoral studies; JG provided doctoral supervision and assisted with the design and analysis of the data. Both authors contributed to the writing of the paper.

## **ABSTRACT**

**Background.** It has been recognised for a number of decades that experts, compared to other practitioners in a number of professions and occupations, are the most knowledgeable and effective, in terms of both the quantity and quality of output. Studies relating to expertise have been undertaken in a range of nursing contexts and specialties; to date, however, none have been undertaken which focus on nephrology nursing.

**Aim.** This purpose of this study was to describe the process of expertise acquisition which emerged during a grounded theory study into nephrology nursing practice.

**Methods.** The study took place in one renal unit in New South Wales, Australia and involved 6 non-expert and 11 expert nurses. Simultaneous data collection and analysis took place using participant observation, semi-structured interviews and review of nursing documentation.

**Findings.** The study revealed a three stage skills-acquisitive process that was identified as non-expert, experienced non-expert and expert stages. Each stage was typified by four characteristics which altered during the acquisitive process; these were knowledge, experience, skill and focus.

**Conclusion.** Of significance to nursing, this study uncovered new aspects of expertise not documented in the literature and it also made explicit other areas which had only been previously implied. In particular, the exercise of expertise is a function of the recognition of expertise by others and it includes the blurring of the normal boundaries of professional practice.

## **KEYWORDS**

Renal  
Expert  
Non-expert  
Grounded theory  
Participant observation  
Interview  
Australia

## **SUMMARY STATEMENT**

### **What is already known on this topic:**

- Benner's seminal novice to expert research.
- Some previous research on expert nursing practice.
- Knowledge and experience are central to expertise acquisition.

### **What this study adds:**

- This is the first study to explore nephrology (renal) nursing expertise.
- It identifies a three-stage process of expertise acquisition in nephrology nursing.
- Expertise has been uniquely identified as a function of four interconnected characteristics, namely, knowledge, experience, skill and focus, each of which alters during the acquisition process.
- Recognition of expertise is prerequisite to its exercise.
- Expertise enables the blurring of the usual boundaries of professional nursing practice.

## **INTRODUCTION**

It has been recognised for a number of decades that experts, compared to other practitioners in a number of professions and occupations, are the most knowledgeable and effective, in terms of both the quantity and quality of output. It is important, therefore, for nurses who are striving assiduously to improve better patient care, to understand, facilitate and expedite the acquisition of expertise.

Nurses' interest in the nature and acquisition of expertise has been gaining momentum since Benner (1984) first applied the Dreyfus' model of expertise to clinical nursing. Benner suggested that nurses pass through five levels of competence in clinical practice. These levels are novice, advanced beginner, competent, proficient and expert. An expert nurse is a person who displays advanced levels of skill and knowledge (Jasper 1994) gained through experience (Benner 1984) with the ability not only to apply but also to move beyond theoretical principles. This ability distinguishes experts from non-experts, and many nurses see the pinnacle of achievement as the attainment of expertise (Jasper 1994).

Nephrology nursing has evolved into a distinct specialty area of nursing in responses to the complex health care needs of people with renal failure (Parker 1998, Bevan 1998, Polaschek 2003), and it encompasses several subspecialty areas such as general nephrology, peritoneal dialysis, haemodialysis and renal transplantation (Stewart & Bonner 2000). In a practice-oriented specialty such as nephrology nursing, it is important to understand how nurses practice and, more importantly, how expertise is acquired because experts achieve the best patient outcomes (Benner 1984). While

studies relating to expertise have been undertaken in a range of nursing contexts and specialties (see for example Benner et al 1992, Greenwood & King 1995, Cioffi & Markham 1997, King & Macleod Clark 2002, Reischman & Yarandi 2002) to date none have been undertaken, in Australia or elsewhere, which focus on nephrology nursing. This study was the first to do so.

### **Aim of the Study**

The aims were: 1) to understand the characteristics of nephrology nursing expertise and the process through which it was acquired; and, 2) to explain how expert nephrology nurse practice differed from that of non-expert nephrology nurses.

### **THE STUDY**

This grounded theory study was conducted in one renal unit in New South Wales, Australia. The renal unit 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. Following ethics approval by both the Area Health Service and University Human Ethics Committees, nurses who worked permanently in each of these areas were invited to participate in this study. Participants' selection criteria (see Table 1) were devised from existing literature (Benner, 1984; Jasper, 1994) and included formal nephrology nursing postgraduate qualification, length of experience, personal characteristics, level of practice (CACCN, 1996; Dunn et al., 2000) and whether nursing peers recognised them as an expert nurse (Aitken, 1997). A panel of senior nurses assisted in this process. When a nurse agreed to participate in the study, s/he was informed whether s/he had been classified as an

expert or a non-expert. Sampling was purposive then theoretical; it consisted of 6 non-expert nurses and 11 expert nurses.

[Insert Table 1]

### **Data Collection And Analysis**

Data collection involved participant observation, informal, open-ended interviewing and analysis of nursing documentation (Glaser & Strauss 1967, Strauss & Corbin 1998, Glaser, 2001). Data was collected over a nine-month period (June 1999 – March 2000) and consisted of a total thirty-two episodes (103 hours) of participant observation, thirty-seven (24 hours) interviews, and ten episodes of nursing documentation (report writing rather than merely charting). Participant observation occurred in all areas of the renal unit and field notes were recorded during all observational episodes. Interviews followed every observational episode and information was sought from participants to clarify the focus of their nursing actions and, more importantly, their rationales for these actions. Interviews were tape recorded and transcribed verbatim. The analysis of documentary sources, such as patient's health records, is common but due to specific contextual factors, only a limited amount of data was collected by this method.

In grounded theory research (Glaser & Strauss 1967, Chenitz & Swanson 1986, Glaser 1978, 2001) data collection and analysis proceed simultaneously using the processes of substantive and theoretical coding. Initially a line by line analysis of the data was undertaken. Questions about the similarities and dissimilarities between expert and non-expert nephrology nursing practice were developed and explored in subsequent data

collection episodes with both groups. Gradually, it became apparent that there were similarities in the practice of expert nurses and these codes then became categories. Simultaneously data collection from non-expert nephrology nurses also occurred. It became clear during continued open coding of the non-expert data that their level of ability and depth of knowledge were different and could be contrasted with those of experts. There were nurses, however, who did not fit neatly into either group. These nurses constituted a third group, that of experienced non-experts. Eventually no new categories emerged and a sense of closure of data collection was achieved. The final stage of the analytical process involved generating theoretical codes to integrate similar categories under one conceptual name.

## **FINDINGS**

The data revealed a substantive grounded theory which explicates a basic social process (BSP) of expertise acquisition and its exercise. The BSP occurs in three stages and were conceptualised as non-expert, experienced non-expert and expert stages (Bonner 2001). Each stage consisted of four interrelated conceptual categories which described how the nurse practiced. These categories or characteristics of nephrology nurses were knowledge, experience, skill and focus.

The first stage was the non-expert stage. 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. The second or experienced non-expert stage revealed that these nurses had sufficient nephrology nursing knowledge and adequate experience while they exercised routine nephrology



nursing skills and their focus of practice was changing. The third and final stage of the acquisition and exercise of nephrology nursing expertise was the expert stage in which nurses demonstrated extensive nephrology nursing knowledge and vast experience; they exercised advanced nephrology nursing skills and were patient focused. Diagram one schematically represents each of the conceptual categories and the BSP of nephrology nursing expertise acquisition.

[Insert diagram one]

In this study, a nurse's knowledge was conceptually defined as an understanding of the facts, values, and procedures related to the context and practice of nephrology nursing. The level of domain-specific knowledge possessed by a nephrology nurse ranged from superficial (non-expert nurse) through to extensive (expert nurse). A nurse's level of knowledge informed her or him about what to do, when to do it, with whom, when, why and how, and the likely consequences of their actions. Experience, the second conceptual category of nephrology nurses, was conceptually defined as the number, frequency and types of encounters a nurse had with a person with a renal disorder and its associated treatment. A nurse's experience was on a continuum ranging from limited (non-expert) through too vast (expert). Experience specifically provided the nurse with opportunities to observe and practice what to do, with what, why, to whom, when, where and how. Observation of another nurse's practice was a source of both instruction and motivation. It provided knowledge which could then be incorporated into a nurse's practice repertoire during subsequent patient care activities. When practising, nurses would also acquire feedback from themselves, patients, other nurses,

equipment, etc, regarding their performance and this feedback would be incorporated into future performances of the procedure. Increasing encounters with similar or related events would lead to automatising of performance.

In this study, skill was conceptualised as the demonstration or actual performance of nursing actions. Skills were influenced by knowledge, experience and to a lesser degree, focus. Skills were acquired through continued practice (i.e., exercise) and from feedback (i.e., explicit and implicit) for a given task situation. In particular, skills were a reflection of practical ability, motivation, intellect and the nurses' ability to process, store and retrieve information. Skill levels ranged from non-expert nurses who practiced in a restricted, limited and rule-bound manner through to expert nurses who clearly demonstrated autonomous, self-directing and flexible nursing actions.

The fourth conceptual category of nephrology nurses' practice was termed focus. This category explains the nurses' centre of attention or what they concentrated on while they were undertaking nursing activities. The focus ranged from inexperienced non-expert nurses concentrating predominantly on the task at hand (e.g., cannulation of a fistula) to viewing actions (and their possible consequences) more broadly, globally and holistically (expert nurses).

### **Non-Expert Nephrology Nurses**

Non-expert nephrology nurses are not proficient in this specialised area of nursing: that is, their understanding of what it is to be a nephrology nurse and how to practice nephrology nursing is limited. Non-expert nurses possessed relatively little domain

nursing knowledge, and they tended to rely on general nursing knowledge. The extent of domain-specific (nephrology) knowledge of non-expert nurses was apparent during observation episodes and then in the subsequent interviews, in which questions were asked directly relating to what was observed. Many of these questions probed for nephrological bases for practice and this revealed that non-expert nurses repeatedly relied on general or non-specialised nursing knowledge to support their practice. As a result of possessing only superficial nephrology nursing knowledge, the non-expert nurses frequently provided sketchy or insufficient rationales for their practice, and their responses when interviewed were often incorrect or revealed knowledge gaps. For instance, one nurse who, although she had many years experience as a nurse, had only a few months nephrology nursing experience viewed the purpose of testing urea and creatinine levels in haemodialysis patients as assessing “how much kidney function remained” (Alexis). Urea and creatinine levels can reflect kidney function in the normal person but in renal units, these tests are routinely conducted to determine the adequacy of haemodialysis treatment.

It is during this stage that non-expert nephrology nurses learn the ward routines, begin to understand typical patient issues or problems that arise, and what nursing actions to implement, and can start to identify the rationales underpinning those actions. They are learning what to do, when to do it, with what, with whom, where and how to do it by observing other, more experienced nurses and by practising. These nurses recognised that their short length of experience in nephrology nursing limited their ability to practice. The length of experience tended to dictate the type of nursing activities non-expert nephrology nurses could undertake and, generally, these included ordinary,

routine nursing activities. 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. One non-expert nurse 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, she 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”.

Non-expert nurses were also easily distracted from what they were doing. In the middle of completing a task, they would stop what they were doing and rush off to do something else only having to come back to finish the first activity. It was readily apparent when observing these nurses that they seemed flustered and disorganised. During interviews questions relating to how non-expert nurses organised their workload invariably evoked responses such as that they felt “rushed,” “not organised” and that providing nursing care in busy periods was difficult. One non-expert nurse remarked

I just sometimes feel like people going around their work so peacefully and comfortably and doing things, you know, relatively fine and then I just seem to be running around in circles (Helen).

Non-expert nurses, felt insufficiently competent to perform many specialised nephrology nursing tasks. They were in the process of acquiring basic (or routine) nephrology nursing skills. They were learning how to apply existing and newly

acquired knowledge. 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*.

My focus was basically to try and get the medications done and maintain all the proper charts and, you know, do fistula obs[ervations], also BSL's [blood sugar levels] and giving insulin, and complete the fluid balances (Alexis)

The length of time spent in the first stage of expertise acquisition was dependent on a number of influencing factors such as breadth and depth of domain knowledge, number and frequency of encounters with people with renal disorders, and aptitude for nephrology nursing. These explain the progression of non-expert nurses to experienced non-expert nurses.

### **Experienced Non-Expert Nephrology Nurses**

In the second stage the nurse is an experienced non-expert nurse. Their routine nursing practice has become fluid, rapid and automatic. It is easier because most tasks are very familiar, demanding less concentration to perform them. They had gained more specialised nephrology nursing knowledge from a number of sources including formal post-graduate nephrology nursing courses and informal, on-the-job learning. Experienced non-expert nurses were able, in more obvious ways, to integrate the routine skills with more sophisticated theoretical knowledge. By comparison with non-expert nurses, experienced non-expert nurses were able to provide better rationales for their

practice. For instance, an experienced non-expert nurse reveals why she cannulated this patient in a particular site:

I've cannulated [Patient's name] quite a fair bit but I know on his venous side of his gortex [a synthetic material used to create a fistula], if you cannulate up too high you get a really high venous pressure so that was a choice on his venous side. On his arterial side he had a little bit of bruising up higher so, I've gone away from that bruising, I've gone lower (Leonie).

By this stage nurses have acquired adequate experience and were very good at “doing” or exercising many routine skills required of nephrology nurses. They were able to guide and direct less experienced nurses in routine nephrology nursing care activities and to cope with most of the patient issues that arose. Their focus was devoted less on performing individual tasks and shifted toward *making things easier* for themselves while undertaking these routine skills.

No, well I suppose there's certain routine that I try...and make things easier...Every shift would have routine things that we do ... you've got a certain routine and you find things would flow along a lot quicker, a lot better (Stacey)

Progression to the final stage of expertise acquisition could only be achieved when several prerequisites had been satisfied. These were conceptualised as recognition of expertise [by others], having an obligation and commitment to and having motivation

for and enjoyment of nephrology nursing. The non-expert nursing data did not demonstrate any of these prerequisites, that is, it could not be coded into any of these categories. Data from experienced non-expert nurses could be coded into these prerequisites in a limited way. Expert nursing data, in contrast, could be readily coded into all of these categories; they were seen frequently during observation episodes and were referred to frequently during interviews.

### **Expert Nephrology Nurses**

The third and final stage is the expert nephrology nurse stage. The entire focus of nurses in this stage was on achieving high quality patient care for people with renal failure. Expert nurses possessed extensive knowledge and vast experience which enabled them to be self-directing in their practice. Expert nephrology nurses have developed extensive knowledge from both formal and informal learning opportunities. This provided greater knowledge to support their practice (rationales) and allowed them to be at the forefront of nephrology nursing.

Oh it depends on what [type of peritoneal] membrane you've got. You might increase the volume, maybe change them round to different percentage of glucose, maybe change the times of the exchanges, maybe shorter dwells or longer dwells, maybe they might be more suitable to CCPD [Continuous Cycling Peritoneal Dialysis]. At least you know what you're dealing with and how you can change what your options are (Sam).

Secondly, experiential learning from the many years spent performing nephrology nursing skills has provided them with precise knowledge about what to do, when to do it, with what and how to do it. Longer experience has provided the expert nurses with greater opportunity to practice and obtain feedback and to develop confidence. Experience also leads expert nurses to understand the consequences of certain situations if they were allowed to occur or continue. In order to perform skills at this advanced level, expert nurses needed to be recognised by others as expert (Bonner 2003). For example, nurses, doctors, and patients recognised some nurses as experts and this privileged them to extend the boundaries of their practice. Such extension included the blurring of the boundaries of normal nursing practice; for example, they prescribed and dispensed medications. By having extensive domain knowledge, vast experience and autonomous skills, expert nurses could devote more attention to the patient, the impact of their nursing activities and the (potential) consequences of their actions.

Having more experience provided expert nurses with a positive feedback loop in which experience increased confidence in the practice of nephrology nursing; as they developed more confidence, the more advanced nursing they undertook (and were allowed to undertake). Eventually, as experience in dealing with multiple patients and situations increased, expert nurses come across relatively few situations which they had not experienced previously. That is, for these nurses:

A lot of the time [it's not new]. I mean usually its things you've seen and [non-expert nurses] haven't...so it's that and experience and, you know, you sort of think along the right lines while you're working,



whereas they are not thinking...[It] sort of automatically [comes to me, I] don't think about it, ...so that is really experience together with theoretical knowledge I suppose (Prue).

Exercising advanced nephrology nursing skills, the third characteristic, was a function of: firstly, the recognition of expertise by patients, other nurses and medical staff:

Patients feel that it's you who has made a difference rather than any other nurse, I mean you build up a rapport and people get to trust you so that it does become your expertise that makes the difference (Fran).

In addition, expert nurses felt an obligation and commitment to their patients and other nurses (see below) and they were the only ones in this study who consistently demonstrated these features which enabled them to blur the boundaries of nursing practice and optimally manage the workload of the renal unit

They [doctors] trust us to change medication, to cease medication if we thought it was appropriate especially when people are new to dialysis and you have to wean them off certain tablets when they start (Sandra)

Expert nurses also blur the boundaries between home and work time; they will work late in the unit when required and will visit patients at home when they are off-duty:

...if it was someone within a reasonable distance [from my home] and I've got [some peritoneal dialysis supplies], which I do sometimes have things at home. I'd do it (Sam)

The final characteristic, which was related to their sense of obligation and commitment, revealed the different focus of attention of expert nephrology nurses by comparison to other nurses in this study. Expert nurses were *patient-focused* in their practice. They regarded that being there and keeping a close eye on were important strategies within their practice to protect patients and to provide quality nursing care.

I mean basically it all centres around the patient, without the patient you've got no unit, no staff, no anything... everything you do for in terms of planning and staffing and managing, everything basically in the end comes back to patient centred practice (Prue)

## **Discussion**

The findings of this study are consistent with extant nursing literature related to expertise acquisition and exercise, particularly with respect to the role of domain-specific knowledge, experience and feedback-governed practice. Importantly, however, it also adds to this literature, particularly in relation to the importance of expertise recognition in the exercise of expertise; the experts' blurring of boundaries to streamline and facilitate care; and, focus of care. In addition, it expands the profession's implicit conceptualisation of skill as specific task competence to a generalised, flexible ability.

Of importance to nursing's understanding of expertise acquisition, this study identified that four interrelated characteristics simultaneously influenced the level at which the nurse practiced and demonstrated the process of expertise acquisition. These characteristics were knowledge, experience, skill and focus. The role of knowledge in this study was interesting. Although the concept of knowledge is complex, for the purposes of this study knowledge was defined as an understanding of the facts, values and procedures, related to the context and practice of nephrology nursing. This knowledge informed the nurses about what to do, why, when, with whom, how and the likely consequences of their actions.

Firstly, the nature of expert knowledge is such that it is very specific to the domain in which the expert practices, that is, it is context- or content-specific (Norman et al 1985, Benner & Tanner 1987, Edwards 1998) and that having both domain knowledge and relevant experience is essential for any expert (Naylor 1987). Domain knowledge, according to Reischman and Yarandi (2002), informs practice and practice, in turn, shapes knowledge.

Domain-specific knowledge (with concurrent experience) was clearly necessary for the acquisition and exercise of nephrology nursing expertise. The data revealed differences in practice between expert nurses and non-expert nurses with respect to the presence and degree of specialised knowledge. Numerous examples of the differences between nephrology nursing practices as a result of the level of domain-specific knowledge of these nurses were identified during the study. For instance, practice developments such as single siting, a cannulation technique, revealed the differences between the three

stages of expertise acquisition and exercise. Non-experts had limited knowledge of single siting; experienced non-experts could explain why it was being done and who was most likely to need it; expert nurses chose the patients who needed single siting and established the sites. Nonetheless, nephrology nursing knowledge in isolation was not sufficient to develop expertise.

Secondly, data analysis revealed that the level at which nephrology nurses' practiced was influenced by the number, frequency and type of encounters they had with people with a renal disorder and its associated treatment but that the time spent in nephrology nursing was not sufficient in isolation from other factors to guarantee expert practice. Although experience in the participant selection criteria was related to the amount of time spent in nephrology nursing, this study confirmed that having greater than five years experience in nephrology nursing was not the sole determinant in the development of expertise. Finally, this study found that the increased level of experience of expert nephrology nurses led to greater confidence in providing nursing care to people with renal failure requiring complex interventions.

Thirdly, experience relates not just to the number of years in practice but to the number and range of learning opportunities it provides. Experience provides opportunities for feedback-governed practice, that is, the application of previously acquired feedback into subsequent clinical procedures (Ericsson et al 1993, Radwin 1995, 1998, Fairweather & Gardner 2000). Expertise in nephrology nursing is a function of a vast amount of feedback-governed practice and this, too, is consistent with findings in other domains

for example chess (Charness et al 1996), music (Sloboda 1996) and sports (Starkes et al 1996, Thomas & Thomas 1999).

In terms of adding to the current nursing literature on expertise, this study has identified two important findings. Firstly, the centrality of the recognition of expertise was a necessary feature for the exercise of expert practice. That is, expert nephrology nurses could only exercise their advanced nursing skills when others recognised them as having expertise (Bonner, 2003). Secondly, only expert nephrology nurses blurred the boundaries of professional nursing practice. They did this by shifting into medical domains in the areas of prescribing, dispensing and ordering of pathology tests when required to ensure patient safety and well-being. Non-expert nurses did not cross these professional boundaries. This finding concerning the blurring of boundaries is consistent with those of Benner (1984), Conway (1996, 1998) and Tye and Ross (2000). However, the study also identified the willingness of expert nurses to blur the boundaries between home and work; experts would visit patients at home during their off-duty time if they thought a visit was warranted. This feature of expertise has not been identified before.

In addition, this study has increased understanding of what a nurse, at various stages of expertise acquisition, focuses on when giving nursing care. Specifically, it provided evidence of a nurse's focus of attention and how this changed as the nurse acquired expertise in nephrology nursing. Non-expert 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 (Coulon et al 1996, Little 2000).

Experienced non-expert nurses had proceduralised much of the routine practice required of a nephrology nurse and this had freed up some of their attention for deployment to other, less familiar task situations. This provided them with additional time to think about and plan their actions; typically, their planning focused on making things *easier for themselves*. To our knowledge, this study was the first to identify this practice focus of experienced non-experts. Expert nurses, by comparison, were entirely focused on the provision of optimal nursing care to people with renal disorders. Their focus of attention, while seamlessly integrating technology into everyday practice (Cooper 1993, Walters 1995), was the patient but this did not exclude attention to other nurses. Expert nurses simultaneously devoted attention to the ways other nurses practiced in order to guide and support them to ensure that all nurses in the renal unit provided optimal nursing care.

Finally, the present study has extended the discipline's understanding of skilfulness by revealing that skills are a more generalised ability or expertness which came from or was learned from practice and experience. This definition diverges from existing literature in which skills tend to be narrowly defined as the performance of tasks. To date, the nursing literature is replete with studies of novice-expert differences in the performance of particular nursing skills such as pressure sore treatment (Lamond & Farnell 1998), pain assessment and administration of analgesia (Noyes 1995, Hamers et al 1997) and why an infant is crying (Holden & Klinger 1988). Nephrology nursing, however, takes place in situations of uncertainty and is more complex than the ability to perform individual tasks. Expert nurses, in particular, exercised advanced levels of

flexible skilfulness which allowed them to deal with a range of clinical/management situations simultaneously.

### **Study Limitations**

This study was designed to be descriptive and theory-generating. The findings, however, cannot be generalised as the sample was confined to one renal unit and consisted of a small number of participants. This implies that the findings may not be fully applicable to other nephrology nurses, other renal units or more widely in other fields of nursing. Nevertheless the findings can be verified (Strauss & Corbin 1998), as they provide an important reference point for nurses seeking to examine the practice of expert nurses.

### **SUMMARY**

Using grounded theory methods, this study explicated a three stage process of the way in which expertise is acquired and exercised by nephrology nurses in New South Wales. Of significance to nursing, it identified expertise as a function of four interconnected characteristics, namely, knowledge, experience, skill and focus, each of which alters during the acquisition process. Secondly, two unique features of expert nursing practice were revealed during this study; these were recognition of expertise and blurring the boundaries. These features, in particular, warrant further research to establish if recognition of expertise exists in other areas of nursing, and to what extent it influences expert practice.

## REFERENCES

- Benner P. (1984) *From novice to expert: excellence and power in clinical nursing practice*. Addison-Wesley, Menlo Park, California.
- Benner P. & Tanner C. (1987) Clinical judgement: how expert nurses use intuition. *American Journal of Nursing*, 82, 402-407.
- Benner P., Tanner C. & Chesla C. (1992) From beginner to expert: gaining a differentiated clinical world in critical care nursing. *Advances in Nursing Science* 14(3), 13-28.
- Benner P., Tanner C. A. & Chesla C.A. (1996) *Expertise in nursing practice: caring, clinical judgment and ethics*. Springer, New York.
- Bevan M.T. (1998) Nursing in the dialysis unit: technological enframing and a declining art, or an imperative for caring. *Journal of Advanced Nursing*, 27, 730-736.
- Bonner A. (2001) *Producing the magnum opus: The acquisition and exercise of nephrology nursing expertise*. Unpublished PhD Thesis. University of Western Sydney, Australia.
- Bonner A. (2003 ) Recognition of expertise: An important concept in the acquisition of nephrology nursing expertise. *Nursing and Health Science* 5, x-x.
- Charness N., Krampe R. & Mayr U. (1996) The role of practice and coaching in entrepreneurial skill domains: an international comparison of life-span chess skill acquisition. In *The road to excellence. The acquisition of expert performance in the arts and sciences, sports, and games* (Anders Ericsson K. ed.), Lawrence Erlbaum, Mahwah, New Jersey, USA, pp. 51-80.
- Chenitz W.C. & Swanson J.M. (1986) Qualitative research using grounded theory. In *From practice to grounded theory: qualitative research in nursing*. (Chenitz, W.C & Swanson J.M. eds.), Addison-Wesley, Sydney, pp. 3-15.
- Cioffi J. & Markham R. (1997) Clinical decision-making by midwives: managing case complexity. *Journal of Advanced Nursing* 25, 265-272.
- Cooper M.C. (1993) The intersection of technology and care in the ICU. *Advances in Nursing Science*, 15(3), 23-32.
- Coulon L., Mok M., Krause K-L. & Anderson M. (1996) The pursuit of excellence in nursing care: what does it mean? *Journal of Advanced Nursing*, 24, 817-826.
- Edwards B. (1998) A & E nurses' constructs on the nature of nursing expertise: a repertory grid technique. *Accident and Emergency Nursing* 6, 18-23.



Ericsson K.A., Krampe R. & Tesch-Romer C. (1993) The role of deliberate practice in the acquisition of expert performance. *Psychology Review*, 100, 363-406.

Fairweather C. & Gardner G. (2000) Specialist nurse: an investigation of common and distinct aspects of practice. *Collegian*, 7(2), 26-33.

Glaser B.G. (1978) *Theoretical sensitivity: advances in the methodology of grounded theory* Sociology Press, Mill Valley.

Glaser B.G. (2001). *The grounded theory perspective: Conceptualization contrasted with description* Sociology Press, Mill Valley.

Glaser B.G. & Strauss A.L. (1967) *The discovery of grounded theory: strategies for qualitative research* Aldine de Gruyter, New York.

Greenwood J. & King M. (1995) Some surprising similarities in the clinical reasoning of expert and novice orthopaedic nurses: A report of a study using Verbal Protocol Analysis. *Journal of Advanced Nursing*, 22, 907-913.

Hamers J.P.H., van den Hout M.A., Halfens R.J.G., Abu-Saad H.H. & Heijltjes A.E.G. (1997) Differences in pain assessment and decisions regarding the administration of analgesics between novices, intermediates and experts in pediatric nursing. *International Journal of Nursing Studies*, 34(5), 325-334.

Holden G. & Klinger A. (1988) Learning from experience: differences in how novices vs. expert nurses diagnose why an infant is crying. *Journal of Nursing Education*, 24, 382-384.

Jasper M.A. (1994) Expert: a discussion of the implications of the concept as used in nursing. *Journal of Advanced Nursing* 20, 769-776.

King L. & Macleod Clark J. (2002) Intuition and the development of expertise in surgical ward and intensive care nurses. *Journal of Advanced Nursing*, 37(4), 322-329.

Lamond D. & Farnell S. (1998) The treatment of pressure sores: a comparison of novice and expert nurses' knowledge, information use and decision accuracy. *Journal of Advanced Nursing*, 27, 280-286.

Little C. (2000) Technology competence as a fundamental structure of learning in critical care nursing: a phenomenological study. *Journal of Clinical Nursing*, 9(3), 391-399.

Naylor C. (1987) *Building your own expert system*. (2<sup>nd</sup> ed.). Halstead Press, New York.

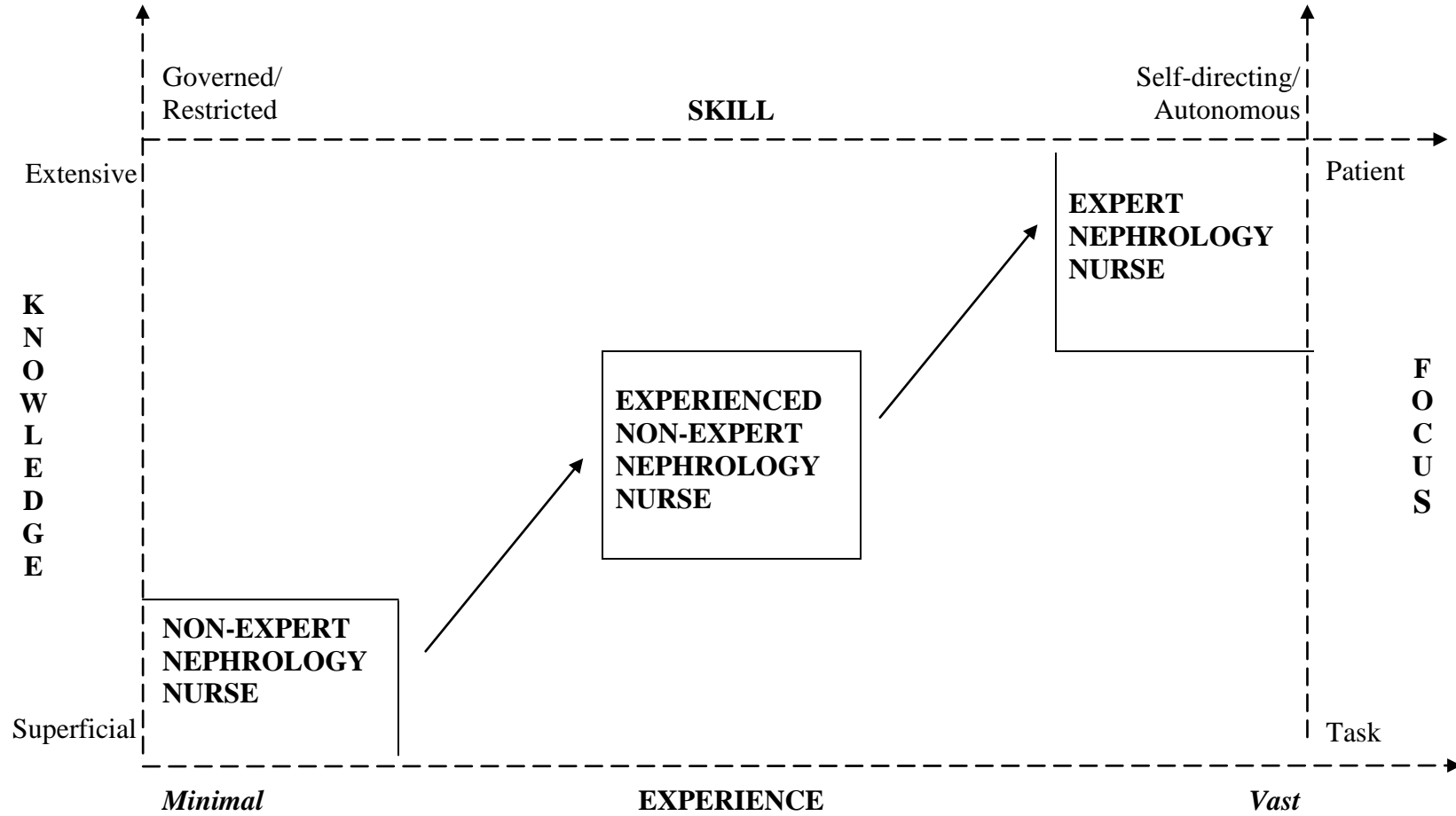
Norman G.R., Tugwell P., Feightner J.W., Muzzin L.J. & Jacoby L.L. (1985) Knowledge and clinical problem solving. *Medical Education*, 19, 344-356.

- Noyes J. (1995) An explanation of the differences between expert and novice performance in the administration of an intramuscular injection of an analgesic agent to a patient in pain. *Journal of Advanced Nursing*, 22, 800-807.
- Parker J. (1998). Nephrology nursing as a specialty. In *Contemporary nephrology nursing* (Parker J. ed), American Nephrology Nurses' Association, Pitman, New Jersey, USA, pp. 5-23.
- Polaschek N. (2003) Living on dialysis: concerns of clients in a renal setting. *Journal of Advanced Nursing*, 41(1), 44-52.
- Radwin L. (1995) Knowing the patient: a process for individualised interventions. *Nursing Research*, 44, 364-370.
- Radwin L. (1998) Empirically generated attributes of experience in nursing. *Journal of Advanced Nursing*, 27, 590-595.
- Reischman R.R. & Yarandi H.N. (2002) Critical care cardiovascular nurse expert and novice diagnostic cue utilization. *Journal of Advanced Nursing*, 39(1), 24-34.
- Sloboda, J. A. (1996). The acquisition of musical performance expertise: deconstructing the "talent" account of individual differences in musical expressivity. In *The road to excellence: the acquisition of expert performance in the arts and sciences, sport, and games* (Ericsson K.A. ed.), Lawrence Erlbaum, Mahwah, New Jersey, USA, pp. 127-166.
- Starkes J.L., Deakin J.M., Allard F., Hodges, N.J. & Hayes A. (1996) Deliberate practice in sports: What is it anyway? In *The road to excellence: the acquisition of expert performance in the arts and sciences, sport, and games* (Ericsson K.A. ed.), Lawrence Erlbaum, Mahwah, New Jersey, USA, pp. 81-107.
- Strauss A. & Corbin J. (1998) *Basics of qualitative research*. 2<sup>nd</sup> edn. Sage, London.
- Stewart G. & Bonner A. (2000) Competency based standards for advanced practice in nephrology nursing. *European Dialysis and Transplant Nurses Association/European Renal Care Association (EDTNA/ERCA) Journal* XXVI(3), 50-54.
- Thomas K.T. & Thomas J.R. (1999) What squirrels in the trees predict about expert athletes. *International Journal of Sport Psychology*, 30(2), 221-234.
- Walters A.J. (1995) Technology and the lifeworld of critical care nursing. *Journal of Advanced Nursing*, 22, 338-346.
- Watson S.J. (1991) An analysis of the concept of experience. *Journal of Advanced Nursing*, 16, 1117-1121.

**Table 1: Participant Selection Criteria**

<b>ATTRIBUTE</b>	<b>EXPERT NEPHROLOGY NURSES</b>	<b>NON-EXPERT NEPHROLOGY NURSES</b>
<b>Registered Nurse</b>	<ul style="list-style-type: none"> <li>• Yes</li> </ul>	<ul style="list-style-type: none"> <li>• Yes</li> </ul>
<b>Postgraduate Nephrology Nursing Qualification</b>	<ul style="list-style-type: none"> <li>• Yes</li> </ul>	<ul style="list-style-type: none"> <li>• No</li> </ul>
<b>Length of Nephrology Nursing Experience</b>	<ul style="list-style-type: none"> <li>• &gt; 5 years in a nephrology area and working permanently in the nephrology unit for at least two days per week.</li> </ul>	<ul style="list-style-type: none"> <li>• &lt; 3 years in a nephrology area and working permanently in the nephrology unit for at least two days per week.</li> </ul>
<b>Level of Practice</b>	<ul style="list-style-type: none"> <li>• Rapidly and effectively copes with multiple complex patient care demands.</li> <li>• Works independently accepting accountability and responsibility for practice.</li> </ul>	<ul style="list-style-type: none"> <li>• Needs assistance with complex patient care.</li> <li>• Follows rules and needs guidance from other nurses to perform.</li> </ul>
<b>Personal Characteristics</b>	<ul style="list-style-type: none"> <li>• Respected by peers and others.</li> <li>• Role model.</li> <li>• Supports less experienced staff.</li> <li>• Aware of the needs of the whole unit.</li> <li>• Professionally active.</li> <li>• Effective communication skills.</li> <li>• High level of assessment skills.</li> <li>• Accurately and efficiently performs nursing activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to meet <b>all</b> of the expert personal characteristics.</li> </ul>
<b>Peer Rating</b>	<ul style="list-style-type: none"> <li>• Considered an <i>expert</i> nephrology nurse</li> </ul>	<ul style="list-style-type: none"> <li>• <b>NOT</b> considered an expert in nephrology nurse</li> </ul>

**Diagram 1: Acquisition and Exercise of Nephrology Nursing Expertise**



LEGEND:   
 - - - - -> Indicates continuing domain   
 —————> Factors influencing movement into next stage

