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Nurses experiences of using clinical competencies a qualitative study

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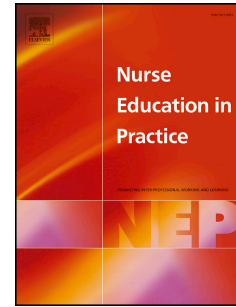
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**CONFLICTS OF INTEREST**

None

**Title: NURSES EXPERIENCES OF USING CLINICAL COMPETENCIES A QUALITATIVE STUDY****Abstract**

Nurses working in haemodialysis units are expected to demonstrate competency and understanding of the technical processes involved in supporting patients undergoing haemodialysis treatment. In 2012 the nursing education team within a large acute National Health Service (NHS) London Hospital Group updated and standardised haemodialysis clinical competencies to assist junior haemodialysis nurses develop their clinical skills and knowledge in delivering nursing care to patients receiving haemodialysis treatment. A qualitative interpretive phenomenological methodology using semi-structured interviews investigated the lived experiences of novice haemodialysis nurses and mentors using these competencies. Nineteen participants including ten novice nurses and nine mentors were recruited from six haemodialysis units within a large acute NHS London Hospital Group. The main findings identified that the haemodialysis clinical competencies were beneficial in developing novice nurses' haemodialysis skills, knowledge and competence. The competencies provided them with a structured framework for assessing competence. Novice nurses experienced stress and anxiety, particularly when they were faced with new and unfamiliar situations. The results obtained concluded the crucial role of expert haemodialysis nurses in mentoring and training novice nurses. The importance of competent skilled nurses in providing care to patients receiving haemodialysis treatment and the value of a competency document were strongly emphasised.

**Keywords:** renal nurse; haemodialysis; competencies;

**BACKGROUND**

Established Renal Failure (ERF), previously known as End-Stage Renal Disease (ESRD) is a long term health condition requiring renal replacement therapy such as haemodialysis treatment. Over 3 million people in the UK have ERF and it is estimated that over 1.5 million of them are receiving haemodialysis treatment (Renal Association 2013). These numbers are expected to increase annually (Renal Association 2013).

Haemodialysis is a routine treatment for patients with ERF, involving attending a haemodialysis unit three times a week for three to five hours each visit. In the UK patients receive haemodialysis treatment in hospitals, satellite units or in their own homes. Satellite haemodialysis units are nurse led and rarely have an on-site nephrologist (Agar *et al.* 2007), resulting in nurses delivering the majority of care (Bennett 2011). Haemodialysis nursing is complex and challenging; nurses are required to provide patient-centred care in a highly technological environment. Quality nursing care is fundamental to improving patients' outcomes. (Renal Association 2013). Nursing care includes preparing patients for haemodialysis treatment, commencing, monitoring, completing dialysis treatment, as well as identifying and managing intradialytic problems such as dyspnoea, hypotension, chest pain and muscle cramps, (Lehoux *et al.* 2007, Bennett 2011). Nurses are required to be competent in haemodialysis techniques such as dialysis management, vascular access maintenance, prevention of infections, medication, along with general knowledge of renal disease, anaemia, cardiovascular disease and diabetes.

A review of the literature found that published papers had developed competencies for nurses working in all areas of nephrology nursing, but none had reviewed their effectiveness (EDTNA/ERCA 2007, Dennison 2011, Lindberg *et al.* 2012, Cowperthwaite *et al.* 2012).

Dennison (2011) created a computer-assisted learning module on dialysis complications for non-expert nephrology nurses. Cowperthwaite *et al.* (2012) developed a competency based programme for nurses employed in private haemodialysis clinics in South America, Europe and Australia. Lindberg *et al.* (2012) designed competencies for nurses working in all areas of nephrology nursing. Although the literature discussed the benefits of competency standards for renal nursing, it did not appear to identify that they were developed for novice nurses newly employed in haemodialysis units and did not explore the nurses' experiences.

In 2012 a Renal Nursing Education Team within a large acute NHS London Hospital Group updated and standardised haemodialysis clinical competencies. The aim of the competencies was to assist junior haemodialysis nurses to deliver safe nursing care by ensuring they were equipped with the knowledge, skills and attitudes to provide compassionate patient-centred individualised care (Francis 2013, NHS England 2012, NMC 2015). All newly employed junior nurses, regardless of previous experience, were given a haemodialysis clinical competency book within the first week of employment. They were assigned a nurse mentor, were required to complete the haemodialysis clinical competencies within twelve months and had the option of attending renal specific development days. Six different renal development days were delivered every eight weeks for twelve months facilitated by the renal nursing education team; attendance was voluntary. Junior nurses were continually

assessed until they were deemed competent by their mentors. They were subsequently encouraged to undertake a university accredited advanced renal care course on completion of the competencies, as part of their professional development.

The role of the mentor was to facilitate learning, provide assessment, feedback and evaluate competence (Gopee 2015). Mentors had undertaken both advanced renal care and mentorship courses. As well as supporting junior haemodialysis nurses in their development, the haemodialysis clinical competencies provided guidance to the mentors in their role. Junior nurses were progressively given more responsibility such as a patient caseload. Mentors were asked to sign off a competency only when the junior nurse demonstrated they were competent in caring for patients receiving haemodialysis treatment.

## **METHODS**

### **Aim**

The aim of this study was to understand the lived experiences of novice nurses and mentors using haemodialysis clinical competencies and how haemodialysis clinical competencies enhance the development of knowledge, skills and competence of novice haemodialysis nurses.

### **Design**

The study design was an interpretive hermeneutic phenomenology (Gadamer 1989).

A hermeneutic interpretive phenomenological approach was used to record participants' experiences.

### **Participants**

The target population was newly employed novice haemodialysis nurses (novices) and mentors working in six haemodialysis units within a large acute NHS London Hospital Group. A convenience sampling strategy was used; nurses who volunteered and met the inclusion criteria were included. Nineteen participants from six haemodialysis units participated, ten novices and nine mentors. According to Gerrish & Lacey (2010) this number is considered manageable for gathering rich data in qualitative research. Polit & Beck (2012) postulate that there are guiding principles to sample size. Hence, the principle of data saturation was applied, whereby staff were interviewed until no new themes emerged. After nineteen interviews had been conducted, categories had appeared and no new information was forthcoming. The ten novices were aged 25-45 years, one male and nine females with three months to two years haemodialysis experience. The nine haemodialysis mentors were all female, aged 35-55 years with ten to thirty years haemodialysis nursing experience.

### **Ethical approval**

This study was approved by King's College London Research Ethics Subcommittee Ref:

PNM/14/15-52

### **Data Collection**

Data were collected through face-to-face in-depth individual semi-structured interviews since this is considered an effective methodology for collecting a range of experiences from different perspectives (Bowling 2009). An interview topic guide was utilised to focus the discussions and enhance the questions. Open-ended interview questions were designed to collect rich data and the interview commenced with general questions. Questions were intended to be flexible enabling interviewees to expand on each question and discuss meanings and views that were important to them.

Once the questions were developed, they underwent careful pre-testing to evaluate comprehension of the questions, gain confidence in interviewing techniques and test equipment (Bowling 2009). Interviews were piloted with two haemodialysis nurses. Data from pilot interviews were not transcribed or analysed. Participants (one mentor and one junior haemodialysis nurse) gave constructive feedback. The pilot study was undertaken to ensure that questions were clear from the onset and modified if necessary. Minor changes were made to the questions.

### **Interviews**

Face-to-face in-depth semi-structured interviews took place between February 2015 and March 2015 at the participants' place of work, in offices or clinic rooms and lasted approximately 30 minutes. Participants completed the consent form and they were assured



of anonymity. During the interviews the researcher provided participants with a copy of the haemodialysis clinical competencies to help them remember the document and aid their discussions. The interview provided novice nurses' and mentors the opportunity to share their experiences of using the haemodialysis clinical competencies and encouraged them to present their learning experiences (Parahoo 2006).

### **Data analysis**

The interviews were audio taped and transcribed verbatim by an independent transcriber. The purpose of interpretation is to gain an understanding of the meaning of text; this is achieved by 'being-in-the-world-of-text'. Koch (1999) recommends utilising a critical interpretive framework to analysis the interviews, read between the lines and understand the text. Ricoeur's (1981) three step interpretation framework, known as a 'hermeneutic arc' was used in conjunction with Gadamer's (1989) hermeneutic circles to analyse data from the interviews. Each transcript was read and re-read, written notes were made in the margins to identify meaning and emerging themes from the interview transcripts. Similar themes that emerged were clustered together; this process was repeated for every transcript. The codes were then condensed into categories derived from the data and higher order categories were identified based on frequency and richness.

### **Rigour**

A reflective field journal was kept to record interpretations and reflections on actions (Koch 2006). The use of transcripts of audio recording assured accuracy. The first author coded transcripts. To enhance reliability in coding the second author checked coded interviews.

Differences in opinions were discussed and codes were modified as required. Complex fragments of the text were discussed.

## RESULTS

The analysis of the transcripts produced five themes (Table 1). Participants were keen to share their experiences and themes were the same for the two groups (novices and mentors) and therefore presented together. Verbatim quotes from the interviews are given in *italics*.

### **Direct care of the patient receiving haemodialysis treatment**

All novices described their initial experience as challenging. High levels of anxiety were common particularly during the first six weeks, *“Putting a patient on dialysis, I was a bit nervous because it’s my first time and you’re not sure if you’re going to make any mistakes”* (novice 5). Novices identified that they needed structured supervision and encouragement which stimulated an increase in acquisition of skills, knowledge and competence, *“I observed my mentor, telling my why and what to do. Then she would let me do it, step-by-step”* (novice 7). Four novices said it took a long time to learn how to *“cannulate an arterio-venous fistula(AVF)”* (novices 1, 3, 4, 5).

Novices discussed their fears and reported that they were unprepared for patients’ suddenly experiencing, episodes of intradialytic hypotension, *“I panicked when complications occurred to patients on haemodialysis”*(novice 5). They were aware that they

were responsible and accountable for monitoring patients during treatment and were fearful that their actions would result in being removed from the nurses' professional register. They felt a sense of achievement when they became competent, "*I can connect a patient safely now, support patients during complications*" (novice 6).

All mentors also stated that novices found working in a haemodialysis unit "*challenging, they panicked and needed to be offered reassurance*" (mentors 2,8 ). All mentors planned learning opportunities, ensuring the novice learnt by "*shadowing them and following step-by-step guidance*" (mentors 1, 2, 5). Three mentors said they had to take their time when mentoring novices and they were "*forgetful*" (mentors 7, 8, 9 )

#### **Patient safety and safe use of equipment**

Nine novices were anxious that if they did not have an understanding of "*haemodialysis machines*" patients safety would be compromised. Five expressed concerns that they did not know how to respond to "*machine alarms*"(novices 2,3,4,5,6).

All mentors confirmed that novices were immediately trained to use haemodialysis machines and follow procedures. This was achieved by shadowing staff in preparing a haemodialysis machine, "*direct observation of preparing a machine and becoming familiar with alarm systems*".

### **Evaluating haemodialysis treatment**

A central role of the haemodialysis nurse is understanding the importance of evaluating haemodialysis treatment. Nursing care involves a monthly review of patients' blood results ensuring that patients are achieving haemodialysis prescription targets. Four novices stated that they were responsible for providing nursing care, including patients who were not on haemodialysis machines. *"my responsibility is to check their blood results and medications are up to date. If it's not I have to speak to the patients, find out if they are taking their medication"* (novice 3).

Mentors said there was a named nurse system, whereby nurses were responsible for reviewing patients' *"blood results, medications, diet"* and discussing management of care with patients, matron and the multidisciplinary team (mentors 2, 3, 5)

### **Patient involvement**

Haemodialysis nurses facilitate empowering patients involvement in their care and participate in decision making. All novices said they had not realised the extent to which patients participated in decision making relating to the treatment and management of their care. Initially novices stated that they found shared decision making a difficult concept, whereby patients questioned the nurses' decisions. They felt that some patients' did not trust them initially (novices 4, 8, 9).

Three mentors said that some patients did not want a novice to care for them *“they tend not to like the new nurse to put them on because they know she’s learning”* (mentor 1).

### **Mentoring and haemodialysis clinical competencies**

All novices said they were supported by their mentors and colleagues, *“every week, she would sit with me and go through the competencies”* (novice 2). However two said that initially when their mentor was not on duty they were unsupported when a patient became hypotensive on haemodialysis. Following an incident their *“progress was reviewed by the matron and new supportive measures were put in place”* (novice 1). All novices said their mentors were *“good and provided direct supervision”*, first by demonstrating how to prepare a haemodialysis machine or initiate treatment, followed by direct and indirect observations.

Novices reported that mentors would not sign them off as competent until they could carry out the procedures safely on several occasions. Mentors gave the novices *“guidelines, to go and research”* (novice 6). Novice nurses felt supported by other haemodialysis nurses however some of them said it was the mentors who were responsible for signing the competency book. Most novices said the competencies were a structured *“step-by-step guide”* (novices 1, 2, 3, 4, 5, 6, 7, 8) and straight forward. Although one novice found the competencies were repetitive and suggested adding diagrams of the kidney for novices to label.

All mentors stated that the haemodialysis clinical competencies supported them in their role. It offered a structured step-by-step guide, ensuring all aspects of nursing care were met. It provided learning opportunities which novices may not otherwise have received, by helping to identify knowledge and skills that needed developing, *"I was new to mentoring, I looked at the competencies a lot, I felt responsible for her learning"* (mentor 5). Mentors also said that they provided novices with reading material or directed them to resources. Although some novices were unprepared for their assessments, most had a positive attitude to learning. Mentors said that staff would give you feedback on the progress of novices and discuss ways of developing them. *"I can ask a staff to shadow my nurse, they always give me feedback"* (mentor 2). However one mentor felt other staff could have been more supportive. *"If we all pulled together, if all the nurses here chipped in, then I think it would be easier to mentor"* (mentor 1). Two mentors said the clinical competencies were *"repetitive"* (mentors 3, 5).

## DISCUSSION

The findings of the study indicated that the haemodialysis clinical competencies offered a structured framework for novice nurses and mentors in assessment of skills, knowledge and competency. Harding *et al.* (2013) reported that a structured competency framework is beneficial to staff development. In this study novice nurses learnt by observing more experienced staff and by practicing skills. Kilcullen (2007) highlighted that clinical supervision enhanced professional development. Perceptions of the importance of learning how to operate a haemodialysis machine, while caring for patients was reflected in all participants' views. They felt that if novice nurses were not accurately trained in operational

procedures of machines or recognising alarm functions, then patient safety would be compromised. Bennett (2010) interviewed and observed twelve haemodialysis nurses and reported that haemodialysis nurses required confidence in their ability to combine nursing care with the functional operation of a haemodialysis machine.

In the current study mentors often provided support by calming anxious novice nurses in the course of delivering nursing care. Newly qualified nurses and nurses who had little acute care nursing experience found dealing with novel clinical situations particularly stressful. A systematic review of perceptions of newly qualified nurses found accountability and responsibility were major stress factors (Higgins *et al.* 2010).

Wilson *et al.* (2013) interviewed nine haemodialysis nurses on their perceptions of cannulating an AVF. Novice nurses perceived cannulation as highly stressful, there were limited opportunities to practice it, they avoided some patients and they were reliant on experienced nurses for support. Atkinson & Tawse (2006) who interviewed six haematology nurses identified that nurses felt unprepared to deal with clinical situations that they had not previously encountered. The present study emphasises that when novice nurses were confronted with novel situations such as cannulating an AVF or managing patients during complications of intradialytic hypotension they may have experienced episodes of low skill reproduction or self-efficacy leading to panic.

This study found that patients were involved in their individual care and decision making. Kidney Health (2013) supports patients receiving haemodialysis to take a role in their own treatment. Nurses teach patients to perform a series of treatment related task such as measuring weight and blood pressure, preparing haemodialysis equipment and cannulating their arteriovenous fistula. Evidence indicates that patients benefit from increased autonomy associated with involvement in their care Rajkomar *et al.* (2014). It has been reported that patients become more confident and have better physiological and physical outcomes Loft (2016). Novice nurses experienced patients deciding who would provide nursing care, such as connecting them to haemodialysis machines. The reactions of panic experienced by novice nurses were often conveyed to patients who were both concerned and worried that inexperienced haemodialysis nurses could potentially cause them harm by damaging their venous access, an essential requirement for haemodialysis treatment. Wilson *et al.* (2013) also reported that patients wished to protect their venous access from harm and would instruct nurses to cannulate a certain area. Herlin & Wann-Hansson (2010) identified that haemodialysis patients were dependent on nurses, had a fear of dying and expressed a need to be able to trust the nurse. Bonner & Greenwood (2006) also highlighted that haemodialysis nurses protected patients from receiving nursing care from inexperienced nurses. They found there were strategies in place to ensure patients received the best available nursing care.

Novice nurses and mentors recognised that evaluating haemodialysis treatment was an important role in haemodialysis. Mentors worked with novice nurses in developing skills for reviewing a patient's blood results, diet, and medication. This was consistent with Bennett



(2010) who showed that haemodialysis nurses were committed to providing quality nursing care and improving patients' quality of life.

Mentors prompted, guided and instructed novice nurses to gain knowledge and develop practical skills. Numerous papers have recognised that mentors are an essential part of ensuring a smooth transition from student to staff nurse (Ross & Clifford 2002, Clark & Holmes 2007, Glen 2009). In this study mentors directed novice nurses to learning resources and drew on novice nurses previous experiences to facilitate learning of new skills and provide quality nursing care. They illustrated application of Kolb's (1984) theory of experiential learning. The essence of Kolb's (1984) learning cycle comprises of four stages; learning a new experience, exploring new experience, analysing new experience against knowledge and applying new learning.

Novice nurses described emotions of stress when they were unsupported and mentors described seeing novice nurses panic. Kilcullen (2007) interviewed five clinical supervisors and five nurses undertaking a master's degree in nephrology and urology nursing. The paper reported 'being supported' as a positive aspect of clinical supervision for students.

Mentors reported that the inexperience of the novice nurse was frustrating and time consuming in relation to completion of a planned procedure along with failure of novices to recall a previously learned practice. However, the findings of the study are consistent with studies on skills acquisition by Bonner & Greenwood (2006) who found that the amount of

time it took an individual to complete a task depended on its complexity and exposure to the activity. They reported noisy rushed environments of haemodialysis units can affect self-efficacy of adults learning new skills (Bonner & Greenwood 2006). This study confirmed the challenges that mentors experienced when novice nurses required additional time to develop their skills and understanding of haemodialysis, or when novice nurses were inadequately prepared for their theoretical discussion assessments.

### **Strengths and limitations**

This is the only reported study to use a large London NHS Hospital Group with participants from six haemodialysis units. Previously published studies focused on a single site and did not explore nurses' experiences of using competencies in haemodialysis units. This study included a self-selected convenience sample and may not reflect experiences generally. It only explored nurses' reported experiences and did not measure their actual competence in clinical practice. Further research could triangulate these findings with novice nurses' acquisition of competency.

### **Implications for practice**

There was strong support for the haemodialysis clinical competencies. The role of the mentor was seen as essential to the professional development received by novice haemodialysis nurses. The haemodialysis clinical competencies provided a supportive structured framework and guidance in assessing novice nurses' knowledge, skills and competence in caring for patient receiving haemodialysis treatment. Novice nurses learnt practical skills by observing procedures performed by mentors and haemodialysis staff.

These results will contribute to future discussions relating to staff working in specialised areas. Therefore, findings may be generalised to other haemodialysis units and possibly to other settings, such as intensive care and cardiac care units, where novice nurses need to learn technical skills on commencing employment.

## **CONCLUSION**

The results of this study demonstrate the crucial role of expert haemodialysis nurses in mentoring and training novice nurses. The importance of competent and skilled nurses in providing quality care to patients receiving haemodialysis treatment was strongly emphasised. Furthermore, the haemodialysis clinical competencies were important in providing a structure which was a necessary pre-requisite to the development of novice nurses.

The findings of this study will assist in further developing empirical studies to include observing novice nurses acquisition of skills in haemodialysis units. This would provide a greater understanding of the quality of nursing care delivered. Further research comparing mentors supporting novice nurses acquisition of skills with and without clinical competencies could be conducted.

The study has exposed the stress and anxiety experienced by novice nurses, particularly when they were faced with new situations. Overall this research indicated that novice nurses relied on experienced haemodialysis staff for continual support. It is believed that the results presented in this study will have relevance to staff development and will be transferrable to other haemodialysis and potentially intensive care units.

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Table 1 Coding used for higher order themes

Code	Theme
1	Direct care of the patient receiving haemodialysis treatment
2	Patient safety and safe use of equipment
3	Evaluating haemodialysis treatment
4	Patient involvement
5	Mentoring and haemodialysis clinical competencies

**Highlights:**

- The haemodialysis clinical competencies offered a structured framework for assessing skills, knowledge and competency.
- Patients were actively involved in their individual care and decision making.
- Novice nurses learnt by observing more experienced staff and by practicing skills, but found dealing with novel clinical situations stressful.
- Novice nurses and mentors recognised that providing holistic nursing care and patient education was an important role in haemodialysis.
- Mentor support was identified as one of the greatest benefits to novice nurses development.