

The Culture of Nurses in a Critical Care Unit

Global Qualitative Nursing Research
Volume 3: 1–11
© The Author(s) 2016
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/2333393615625996
gqn.sagepub.com



Suegnèt Scholtz¹, Elsabe W. Nel¹, Marie Poggenpoel¹,
and Chris P. H. Myburgh¹

Abstract

Critical care nurses have to adapt to a fast-paced and stressful environment by functioning within their own culture. The objective of this study was to explore and describe the culture of critical care nurses with the purpose of facilitating recognition of wholeness in critical care nurses. The study had a qualitative, exploratory, descriptive, and contextual design. The ethnographic study included data triangulation of field notes written during 12 months of ethnographic observations, 13 interviews from registered nurses, and three completed diaries. Coding and analysis of data revealed patterns of behavior and interaction. The culture of critical care nurses was identified through patterns of patient adoption, armor display, despondency because of the demands to adjust, sibling-like teamwork, and non-support from management and medical doctors. An understanding of the complexity of these patterns of behavior and interaction within the critical care nursing culture is essential for transformation in the practice of critical care nursing.

Keywords

ethnography, exploratory methods, intensive care unit (ICU), observation, participant, triangulation

Received July 7, 2015; revised December 1, 2015; accepted December 7, 2015

Critical decisions, highly stressful situations, and ethical dilemmas are all part of the unique environment of a critical care unit (CCU). Despite this harsh reality, there are those who choose to work within this environment. Critical care nursing focuses intensively on all aspects of basic nursing care and life support, and thus combines the essence of nursing with observation, insightful and even intuitive interpretation, and reactions to the slightest imbalance or deviation in a patient's condition (Urden, Stacy, & Lough, 2006). In their efforts to provide quality care to critically ill patients, critical care nurses have to face many challenges within their working environment (Drews, 2013). Pretorius (2009) acknowledged the effect of this unhealthy work environment on critical care nurses and promotes a positive practice environment as the foundation for successful recruitment and retention of critical care nurses. It is not only the environment but also experiences which play an important role in their intent to stay within a CCU or even the profession (Cummings, 2011).

Cummings (2011) found within a year of her study that 33% of nurses working within acute care settings intended to resign. In the public sector of South Africa where this study was conducted, there are only 0.3 CCU trained nurses per CCU bed. Most of these nurses (42.8%) have a maximum of 5 years of nursing experience (Scribante & Bhagwanjee, 2007) and only 5.7% of nurses in South Africa continue to

practice their profession in the critical care environment after 20 years (Scribante & Bhagwanjee, 2007). In developing countries, nurses are central to and in some ways the most visible part of health care services. They have their own responsibilities when it comes to patient care and often take on responsibilities usually afforded to physicians (Singh, Nkala, Amuah, Mehta, & Ahmad, 2003).

The World Health Organization (2006) accentuated the need for increased efforts to improve the performance of the existing health workforce and to slow the rate at which professionals leave health care services. There is also currently an emphasis on patient-centered care, which within the context and complexity of a CCU adds to existing physical and intellectual challenges (Schluter, Winch, Holzhauser, & Henderson, 2008). Nurses are required to meet the physical, psychological, and even spiritual needs of their patients. Towell (2011) stated that critical care nurses embody dimensions of mind, body, and spirit and function effectively—holistically—within their environment. Towell further

¹University of Johannesburg, Johannesburg, South Africa

Corresponding Author:

Suegnèt Scholtz, University of Johannesburg, 6th Floor, West Wing North, John Orr Building, Doornfontein campus, Johannesburg, Gauteng Province, South Africa.
Email: s8scholtz@gmail.com



identified emotional intelligence as a problem in critical care nurses and stated that emotional intelligence contributes to wholeness. It is this concept which led to the idea that poor performance, the lack of patient-centered care, and nurses leaving the profession are symptoms of a greater problem.

Wholeness, consciousness, and caring are concepts associated with the theoretical perspectives of nursing, with wholeness as the starting point for nursing praxis (Cowling, Smith, & Watson, 2008). According to Buechner (1993), each person carries an internal vision of wholeness inside of him or her, reflecting a true version of humankind. Human beings are “whole” beings, but perceptions and experiences can cloud this reality. According to Cowling et al. (2008), “Caring cleanses the doors of perception so that we can see ourselves and others as they are—whole” (p. 45). Through caring, critical care nurses need to see themselves and others as whole.

Newman (2003) referred to wholeness as a pattern and healing as the process of recognizing this pattern. According to Cowling et al. (2008), once one recognizes the pattern, it will encourage transformation. Becoming more aware of wholeness as a pattern facilitates growth in caring and love for others and the self (Cowling et al., 2008). Nursing involves a consciousness of wholeness, as well as meaning in nurse–patient experiences which establish an organized existence for the nurse as a person, being integrated with the environment (Cowling et al., 2008).

Critical care nurses cannot be separated from their experiences in critical care or from the world which they are experiencing. They are present in their experience of the present (Newman, 2003). Therefore, meaning and consciousness of the pattern of wholeness can only come from expanding our knowledge about critical care nurses within a CCU. To recognize the pattern of wholeness, critical care nurses need to know their own critical care nursing cultural values within the critical care environment (Evans, Bell, Sweeney, Morgan, & Kelly, 2010). Finally, Meyer (1989) viewed wholeness as a synonym for the Biblical perspective of peace and defines it as harmony in relationships; a person’s experience of life; an emotional awareness and an awareness of other people in the community; well-being; abundant and righteous living. According to Cowling et al. (2008), this inner peace directs the nurse’s consciousness toward caring.

The research questions that arose from this problem statement were as follows:

Hypothesis 1: What is the culture of critical care nurses in a CCU?

Hypothesis 2: What can be done to facilitate recognition of wholeness in critical care nurses?

The critical care environment contributes to a culture of critical care nurses which have distinctive social patterns, different from the mainstream of nursing (Leininger, 1997). According to Dodek, Cahill, and Heyland (2010), the culture

of an environment assists members of that culture to determine what is important in a situation, how interactions should take place, and in what ways they can affirm their beliefs, values, and norms.

Research consistently ventures to describe or explain the experiences, perceptions, and actions of critical care nurses in their work environment, including perceptions of ethical problems, futile care, and end-of-life care, which was found to be the greatest ethical and moral issue for both physicians and nurses (Attia, Abd-Elaziz, & Kandeel, 2012; Çobanoğlu & Algier, 2004; Gaudine, LeFort, Lamb, & Thorne, 2011; Hov, Hedelin, & Athlin, 2007; Palda, Bowman, McLean, & Chapman, 2005; Sibbald, Downar, & Hawryluck, 2007). Findings from research on staffing issues in acute care suggest that an effective patient–staff ratio within CCUs is mostly one nurse to one patient, but the ratio may be higher where staff shortages are experienced. Research also shows that understaffing, or unqualified staff assigned to a CCU to correct shortages, can increase the responsibility and stress levels of critical care nurses (Bray et al., 2010; Cummings, 2011; Gurses & Carayon, 2005; Tschannen & Kalisch, 2008).

In recent research, moral distress, obligations, and work responsibilities of critical care nurses were studied. Findings identified a need to support nurses in difficult critical care situations (Burston & Tuckett, 2012; Cronqvist, Theorell, Burns, & Lütznén, 2004; McGibbon, Peter, & Gallop, 2010; Schluter et al., 2008; Wiegand & Funk, 2012). We found several individual issues and performance obstacles within the critical care nurses’ work environment (Drews, 2013; McGettrick & O’Neill, 2006; Ulrich et al., 2007), with literature supporting critical care nurses’ attitudes and attributes regarding critical care (Evans et al., 2010; Henneman et al., 2010; Hensel, 2011; Hughes, 2012; Mullarkey, Duffy, & Timmins, 2011).

Critical care nurses and their relationships with patients or the patients’ families were recently studied (Comrie, 2012; Hickman, Daly, Douglas, & Burant, 2012; Kim, Yates, Graham, & Brown, 2011; O’Connell, 2008; Price, 2013; Vandall-Walker & Clark, 2011; Vouzavali et al., 2011); their working relationships with other medical professionals also form part of the existing literature (Fray, 2011; Schmalenberg & Kramer, 2007; Stein-Parbury & Liaschenko, 2007). It is clear that researchers studied many separate elements within the critical care environment and individual aspects of critical care nursing, but there are no explorations into the culture of critical care nurses. The purpose of this article—the exploration and description of the culture of nurses in a CCU—is limited to answering the first research question.

Method

To understand the critical care nursing culture, this study focused on critical care nurses within the context of a CCU. A qualitative design—more specifically an ethnographic study—was chosen, coinciding with a post-modern constructivist

philosophy of science. This implied that understanding the meaning of the culture of critical care nurses was explored through participants' views and their interactions with one another, predicting the need for an in-depth exploration (Creswell, 2013; Denzin & Lincoln, 2011). Research commenced after ethical clearance was provided by an Academic Ethics Committee.

Sample

The purposively selected 10-bed general CCU received mostly adult medical or surgical patients and pediatric patients, in exceptional cases. Within this unit, all qualified and experienced registered critical care nurses were purposefully included to participate in an in-depth study into their work lives. Regular agency staff was also included in the study. The final sample consisted of all registered nurses (RNs)—working within the CCU—who had given their consent. The occurrence of data saturation predicted the number of interviews necessary for this research. According to Guest, Bunce, and Johnson (2006), data saturation occurs at the point when new data produce minimal changes to the codes. This point was reached after 13 interviews.

Data Collection

The researchers discussed the purpose and objectives of the study with the participants during a general meeting. All the nursing staff working within the unit agreed to the presence of a researcher as an observer and gave written informed consent. One of the researchers, who was a practicing critical care nurse with a master's degree in nursing, availed herself to participate as a CCU nurse in the selected unit on two occasions prior to the study and twice during the study. The dual purpose for becoming a participant was to familiarize her with the setting and to make contact with the participants in a non-threatening way—from the inside. She became part insider and part outsider, providing an opportunity to be a part of the observed culture, while remaining distant (Creswell, 2013). This enabled her not only to participate but also to step back and reflect on the rich points she observed (Agar, 2004). She visited the unit regularly during weekdays, on occasional weekends, and during night duty. The researcher observed and made field notes and conversed with these nurses within their work environment for 1 or 2 days in a week during a period of 12 months.

The researcher decided to hand out diaries during the second month of observation. Participants, who voluntarily agreed, kept a diary for 1 month. They needed to fill in the diary daily, preferably after a work shift, as well as on their off-duty days. They could write anything pertaining to their work lives. Eleven diaries were handed out, of which three returned as completed. The researcher planned and scheduled formal, open-ended interviews with participants and conducted them in a private setting. It took about 1½ hours

of off-duty time. The introductory question for the interviews was as follows: How do you experience working in this CCU? The interviews were then structured around rich points (Agar, 2004), which the researcher found during her observations and fieldwork. She directed the conversation with her observations in mind, without imposing too much structure on the interaction but conversed with participants to clarify and attach meaning to her observations.

A process of data triangulation was used to ensure that multiple realities of the case could be explored to provide a cultural description and for the purposes of validation. Extracts from observations, which included sensory perception and field notes, also included the researcher's impressions and insight during data collection. Data from participant diaries and transcripts of conversations of in-depth, open-ended interviews were autobiographical and provided a unique vantage point of the individual in the CCU culture, verifying the interpretations and meanings of rich points observed during fieldwork. The data had the same focus but provided diverse views of the culture under study.

Audiotaped interviews, personal diaries, and field notes were stripped of identifiers, including names and dates. A password and data encryptions were used to protect electronic data, and raw material and data were kept secure.

Analysis

Data collection and analysis took place concurrently. The analysis processes described as a spiral by Creswell (2013) were used to organize the data. It involved filing data into segments that were easy to retrieve. All transcripts were carefully read in conjunction with the identification of rich points and a content analysis of the data. The researchers took notes throughout this process to obtain a sense of all the collected data. The coding process involved a combination of techniques, including the identification of rich points which piqued the researcher's curiosity about other possible connections, explanations, and meanings, resulting in further exploration and reflection (Agar, 2004). After all transcripts had been carefully reread, they were coded. These codes became a list which fell into patterns.

The next step involved making a list of smaller patterns, then clustering them together, highlighting those patterns that represented information which the researcher expected to find and information that could be described as being unique (Creswell, 2013). These patterns and explanations were then actively sought out, followed by a search for evidence in the data to support these codes. The data were read through once more to find good descriptions of the behavior and other cultural aspects presented by the codes (Creswell, 2013).

The process continued by classifying the data and identifying cultural patterns which described how the culture-sharing group worked (Creswell, 2013). The codes were named to provide the best description of these cultural patterns. A

detailed description, or “thick description” (Denzin, 1989, p. 83) of the reality of the critical care nursing culture, included the cultural aspects and meanings derived from the data analysis.

The final step was to assess whether the existing data should be recoded (Tesch, 1990). The data were also coded by an independent consultant, with a PhD in nursing, who had found similar patterns. Meanings were attributed and validated by participants from the critical care culture. The final results were compared with the results of the existing literature.

Findings

At the time of this research, there were only female nurses working in the selected unit. The RNs who participated ranged in ages from 25 to 55 years, with an average age of 42 years. They had between 1 and 23 years of experience in critical care nursing. Ten of these nurses had additional training in critical care, and three had experience in CCUs but with no additional training.

Five patterns of behavior and interaction revealed the culture of critical care nurses, representing a holistic cultural portrait. Each pattern contains categories that describe its characteristics and meaning. These patterns of behavior and interaction include patterns of patient adoption, patterns of armor display, patterns of sibling-like teamwork, patterns of dependency due to the demands of adjusting to the critical care environment, and patterns of non-support from management and the medical doctors.

Patterns of Patient Adoption

Patient adoption was the term provided for the pattern of behavior and interaction observed when critical care nurses take care of a patient. It became evident that the patient is the primary focus and reason for any nursing action within the CCU.

Critical care nurses focus on their patients. After the initial contact between the critical care nurse and her patient, the nurse assumed responsibility for the patient’s care. This is a unique interdependent relationship which necessitates a very fast adjustment to the boundaries and responsibilities between the nurse and the patient. Many nurses have mentioned “the patient” to be the only, most important, and most rewarding side to their work. Critical care nurses were attracted to the concept of total patient care. One nurse stated, “For that twelve hours you wash him, you do everything, you give medication and observe the patient. I like that.”

Focus was their primary objective, and for the critical care nurses, witnessing the effects of “going all out” about patient care was what translated into job satisfaction. Critical care nurses in this study saw their input into a patient’s care as necessary and important, to both their own well-being and

the well-being of their patients. They enjoyed the challenges of caring for a very ill patient. It was important for them to feel that they had made a difference and to experience the improvement in their patients; as another nurse stated, “The patients come back once they have been discharged . . . and you think . . . fantastic, patient made it.”

These critical care nurses seldom regarded patients as a negative consequence of nursing in a CCU. They became upset about all the things that opposed or threatened patient care, for example, disagreements among doctors over patient treatments and dysfunctional family members trying to interfere with procedures or care, while ignoring the patient’s condition. Another example of this was incompetent nursing staff looking after very ill patients or understaffing which caused nurses to feel they had neglected a patient who needed more intensive care. This is evident by the following statement: “I don’t like to feel like I neglect a patient.”

Critical care nurses experienced the importance of being able to give of themselves to their patients. The critical care nurse took responsibility for the patient’s care, nurtured and protected the patient. In short, the critical care nurse adopted the patient. This was also very evident in the compassion and concern displayed by critical care nurses toward their patients.

Critical care nurses’ behavior and interaction influenced by the role of a CCU patient’s family. Critical care nurses made room for the critically ill patient’s family but needed to give undivided attention to their patients. Patients who were critically ill were not always able to deal with their family members and were mostly too ill to enjoy the visiting times. If a patient became unstable, the critical care nurses would put the patient’s well-being first and ask the family to leave for them to take control of the immediate threat to the patient. One nurse stated, “The visitors sometimes take more of your time and attention than the patient.”

Critical care nurses provided situational support to the family when it was warranted, for example, with a new admission, after a patient emergency had occurred, and with the death of a patient. They showed sympathy for the patient’s family and even made exceptions to the rules during visiting hours. One nurse stated,

And she yelled at me—I’m a racist bitch . . . Then I thought to myself, you know this poor woman . . . You must know, I never took it personal . . . It’s not many people who have to hear that your husband is going to die.

There were a mutual focus and understanding between the critical care nurses and the patient’s family. The patient’s family was a very important part of, and could not be separated from, the patient. They posed some challenges to the nurses who needed to involve them in decisions regarding the patient’s treatment or care plan. There was also a matter of role adjustment with regard to their family member’s illness.

Critical care nurses were often required to be mediators between family members who could not cope with the patient's illness and their own issues, while visiting. They did not like to become involved in family feuds, but sometimes this might be unavoidable. Nurses in this study did not like to go into technical details or even diagnostic details about readings on the equipment used in the treatment of their patients as noted in this statement: "It's about the patient at the end of the day. So he must visit with the patient, he did not come to visit the monitor."

Even though the nurse adopts the patient, the role of the critically ill patient's family influenced critical care nurses' behavior and interaction with the patient and the family.

Patterns of Armor Display

The term *armor display* is used metaphorically. Armor is described in the dictionary as a defensive, protective covering that prevents injury to the body, when worn in battle (The Free Dictionary, 2013). While observing critical care nurses in their work environment, it became evident that there was a difference between their exterior personality (armor) and the inner, protected personality. One nurse said, "I don't think people at home understand what you're going through at work and people at work also don't know who you are when you're at home."

Armor display was earmarked by verbal and non-verbal communication and by constantly applying coping skills and adapting. Pride in the critical care nursing culture is another aspect of armor display, as well as the critical care nurses' utilization and display of knowledge and practical skills.

Verbal and non-verbal communication is a part of critical care nurses' armor display. CCU nurses were perceived by others as being cold and hard. They were observed to carry on with normal ward activities after the death of a patient. In a sense they were actively withholding emotions—keeping them at bay. They became emotionally disconnected. This might be by choice or even a subconscious skill that had developed over time. During an interview, one nurse said, "You tell them that you are sorry. But you keep so much of yourself back." Another nurse remarked, "I can really cry . . . No, I don't normally cry at work, I cry in front of my husband. I've got a soft heart, but I will not cry at work."

Other verbal and non-verbal communication also included the use of a different verbal language. They used sarcastic remarks, their own abbreviations and medical terminology, and might refer to patients by their diagnosis. A diary inscription in support of this stated, "One bed open after a death—for the doctor's Aorta bypass." Nurses complained about difficult circumstances within their unit. Complaining might have been a way of coping with the demands of the CCU. They were sometimes described as moody and irritable. This was mostly observed during a very busy shift. It was witnessed on many occasions, and during interviews it was

found that they would display their powerlessness in a situation—verbally or even non-verbally—by sighing aloud or rolling their eyes.

Coping skills and adaptation are a part of critical care nurses' armor display. One nurse stated, "You learn to adapt . . . you've got to be a strong person." To talk about it and not to talk about it were both used as coping skills. Work-related issues were discussed with either family or colleagues, but alternative help or counseling was rarely used—even in light of statements like these: "How do we cope when you have to go out and tell a mother that her child is dead? How do you do it?"

Emotions that are heaped up will sometimes be vented at home or even at work. They either have or develop a strong determination and cope by staying in control: "Press through (laugh), because there is no other way." Humor was used as a way of coping with the CCU environment and by telling one another horrific medical stories. The reason as to why this was used as a coping skill was not very evident. These nurses also took up hobbies or did other entertaining or relaxing things at home as a way of coping: "I want to be away from work and it's not that I hate my job. I just don't want to live my work."

They often discussed the possibilities of finding other employment, and some even made plans up to a certain point. It was like a "great escape" for them. Most nurses never carried through their plans and kept on making new ones. One nurse explained this by saying, "None of them actually knows what they would like to do. So I think, it's kind of a utopia where you told yourself I would escape to or hide in, to get rid of all these negative things."

These nurses made use of introspection and reflection on their own acts and thoughts, which led to a mind battle about the hard decisions they made and the consequences, as evident in this statement: "That's the right thing, I did the right thing. But my heart kept telling me no." They experienced guilt and other emotions about end-of-life decisions and routine actions, followed by the death of a patient, until they obtained inner peace and moved on. One nurse said, "I felt sick about it for days afterwards!"

Religion might also play a part in restoring peace, as is evident by this nurse's admission: "I go home and I work through my day and think through my day and I pray and read, my religion is very important to me." They often asked themselves why they were critical care nurses and why they did it. One nurse wrote in her diary, "This is a continual search to purpose—purpose of why—why am I doing this?" They realized who they were, what it demanded from them, and how it had changed them.

The importance of critical care nurses' pride in the CCU culture. Pride and territorial behavior were witnessed in the organization of the critical care nurses' work setting—specifically the area surrounding the patient. After nurses

had been allocated to patients for the day, they usually proceeded by making a point of reorganizing their work environment to their own set of standards. This included the bed area and the paperwork related to the specific patient. During an interview, one nurse explained, “You want to be good, you want to be good at your work.”

Critical care nurses stay in their closed environment and work with the same people for a long time. When confronted or criticized by others, they tend to defend their work methods and even their colleagues vigorously. They feel strongly about their unit. Even the ideals and standards of care were defended. One nurse stated, “What happens there is ours . . .”

These nurses also defended their occupation, and they perceived most people outside of the unit—even other hospital personnel—to be unaware of and having no idea as to what their work entailed and how they functioned and survived within that environment: “I will introduce myself as a nurse, because you know what, they in any case don’t know what an ICU nurse is.”

Critical care nurses’ utilization and display of knowledge and practical skills are a part of their armor display. Armor display could also be seen in an emergency situation, when nurses took control, remained calm, and ready to handle a crisis. In a way they were armed with knowledge and practical skills to meet the challenges of the CCU. Many nurses also remarked on the necessity of these qualities in a CCU nurse. This was clearly evident in the following remark: “Here you must be able to take your patient, and you must be able to run and know what you’re doing.”

Keeping set routines was a necessary action for these nurses to handle stressful situations. When any emergency interrupted this routine, the nurses adapted, handled the crisis, and then returned to the routine tasks as if nothing had happened. They enjoyed the challenges of applying their knowledge and skills, which became instinctive actions in certain situations.

Patterns of Despondency Because of the Demands to Adjust to the Critical Care Environment

The researcher often observed despondency among these nurses which was a consequence of the demands to adjust to the CCU environment.

Despondency observed due to the exposure to the CCU elements. The way in which nurses were introduced to the CCU played a vital role in the time they took to adjust to this environment. One nurse stated, “I don’t think anyone adjusts to the ICU immediately, it takes time.” CCUs have many cognitive challenges, and therefore nurses also require continuous training. The need for training was not always met in this environment, and this inadequacy became and remained an added challenge for adjustment in this environment. The

CCU was a fast-paced, stressful, and noisy environment which had many technological challenges. These elements by themselves were small, but added together on a busy day led to a build-up of frustrations as evident in this diary inscription: “The telephone just keeps on ringing. The telephone and alarms are something from hell . . . I am really sick of broken equipment!!!”

They were exposed to various infections: “There was Acinetobacter infection in the unit; we were all stressed, because you feel it’s your fault.” They worked long hours and difficult shifts. A few nurses mentioned these issues during the interviews: “The hours are too long. Twelve hours are far too long”; and “You don’t actually have a choice, but I’m not a person for night duty.”

Ethical issues, including end-of-life decisions, are a part of any CCU environment. These issues were very real, and CCU nurses had strong feelings about them. Death and exposure to traumatic situations were unavoidable elements of the CCU, and nurses were confronted with these on a daily basis: “The doctor said that she must wean off the inotropic drugs, which support the patient’s blood pressure, but the patient already had a poor blood pressure. The nurse did not feel comfortable in doing this.”

Despondency observed due to the high work load in the CCU. Despondency with the demands of handling the work load was observed and mentioned by all of the nurses: “Because the problem here—it is actually the staff . . . we don’t have a lot of nurses anymore.” The work load was mostly defined by staff shortages and the company policies surrounding it, the administrative load, and students. Students were seen as contributing to the work load, rather than helping: “If you have a full unit with very ill patients and then to teach someone from scratch . . . No, then I rather work with one more patient . . .”

The researcher observed that as soon as the work load stressors increased, it led to increases in conflict among colleagues. It also threatened patient adoption, the nurses’ main focus; thus leading to more stress at work and less job satisfaction when coping skills failed. They were furthermore unable to provide the care they desired for their patients. This was written as a diary inscription: “Work allocation—difficult, here are no strong people today and the unit is filled to the brim.” Many a time, these nurses accepted more patients than they felt comfortable with taking responsibility for.

Agency staff who did not permanently work in the specific unit was not a solution toward decreasing the work load; instead, agency staff often caused more work and a decrease in standards of care. This was said during an interview: “Many of these agency nurses only come for the money. They can’t be bothered about the rest.” Shift leading proved to be very difficult in a CCU that was short staffed and with new staff or students allocated to very ill patients, as noted by some of the shift leaders: “You are the shift leader and you have to look after a ventilated patient and

another one and then you take the shift also”; and “You had to handle all the stress and nobody could think for themselves, because they didn’t have the knowledge.”

Added to the physical and emotional work load was an administrative load, which was considered to be equally important. Every action was written down and a few extra forms for reporting and various committee activities added up to the administration within the unit. It was stressed that “the paperwork repetition is far too much.” Critical care nurses preferred to nurse their patients without the added administration surrounding it. Their issues with administration worsened due to staff shortages and the added patient load.

Patterns of Sibling-Like Teamwork

The importance of teamwork was surprising. Each individual nurse interlinked with one another, and that seemed to be essential toward the effective functioning of the CCU environment.

Bonds of cohesion observed among critical care nurses. They seemed to know one another’s strengths and weaknesses. One nurse said, “We know each other’s shortcomings and we know each other’s strong points and . . . that’s what makes the work easier in the end.”

They learned to work and grow together. In an emergency, it was considered vital to know your colleagues and to apply their knowledge and skills in a way that gives the patient the best chance of survival. These nurses complemented one another. A very important element of this pattern was bonds of cohesion, as noted by this statement: “We must all use each other to make a stronger team.”

The shift leader, an experienced CCU nurse with additional training or a master’s degree in CCU nursing, is selected on a daily basis to manage and guide other team members in the CCU; other leadership within the unit was also considered an important aspect in the bonding of the team. The team leader could either improve the team’s attitude toward each other or have the opposite effect: “I think when the shift leader is unsure of herself, then she makes the whole team that works with her unsure.”

Interpersonal relationships characterized by fight and support relationships among critical care nurses. Teamwork took on a sibling-like fight and support or love and hate relationship. One nurse said, “And you later become like family to each other and . . . then you also fight.” Teamwork was considered the most important aspect of making critical care nursing work. The nurses saw each other as dynamic, assertive, strong-willed personalities, which led to challenging interpersonal relationships. It was considered essential for the CCU environment. Competition over position and knowledge was seen to have a positive or motivational, and a negative effect. The opinion of one nurse was “competitiveness

. . . in a certain sense it is actually good, it pressures them to go and learn.”

Conflict among colleagues was a real problem in this CCU and was confirmed throughout the diaries and interviews. The reason for the conflict might be anything from personality clashes to non-support in team efforts. While the researcher was observing these nurses, she found them to be irritable when overly tired and this, in the end, led to conflict. It also became clear from this diary inscription: “Today half of the personnel in the unit were irritated and impatient . . . I think everybody is tired.”

These nurses were of the opinion that it was necessary to provide one another with emotional support. Besides emotional support, critical care nurses supported one another in work activities and would criticize one another, mainly in an effort to teach. This method was not always constructive.

Patterns of Non-Support From Management and the Medical Doctors

Nurses could not provide nursing care to critically ill patients on their own. They needed a multi-disciplinary team effort. They were aware of this fact, but they received little support from management and medical doctors. This created a more stressful work environment.

Behavior and interaction of critical care nurses influenced by the perceived non-supporting role of management. These nurses perceived hospital management as rather focusing on financial issues and not on patient care as they (the nurses) did. They perceived the hospital and even the unit management to lack understanding and support in their situation: “I feel that management doesn’t give us the support that they should.” This was mentioned often with regard to help where staff shortages and problems within the medical team became a crisis: “Here they have this idea that you should just cope.” Non-support was also evidenced by the nurses’ perception of inconsistency, favoritism, and lack of fairness. The influence and effects of the leadership style in the unit were sometimes questioned, especially when these nurses became frustrated with their circumstances at work.

Behavior and interaction of critical care nurses influenced by their ambivalence toward medical doctors. The relationship between critical care nurses and medical practitioners was considered to be one of non-support. Nurses sometimes received degrading feedback and unreasonable demands or reactions from the doctors. They considered it important to be assertive when it came to the doctors, but not all nurses could cope with this, and communication between them and the doctors was poor. This included illegible written prescriptions and misunderstanding of verbal orders. It was evident that there was difficulty with obtaining prescriptions from doctors. This placed these nurses at a medical-legal risk and could also influence the efficacy of treatment. Unavailability of or

uninvolved doctors were another serious problem for these nurses as evident by these statements:

But some of the doctors put their cell phones off. Others just transfer the patient to us, so that they won't be bothered during the night.

None of them really takes ownership of the unit . . . And all of them expect that you need to have things precisely the way they want it.

Yes, and if they really don't get the doctor, then we act, but not always within our scope of practice, but that which we know we have to do in a crisis, you know.

Most critical care nurses were of the opinion that they should stay professional despite any perceived unprofessional conduct from the doctors or even their lack of support. It was important for these nurses to be acknowledged and respected for their role in the patient's care, and they wanted to be included in the decisions regarding patient care: "Sometimes we know what is better for the patient. They don't want to hear it. They've got their own preconceived ideas about how they will do things."

Discussion

Five patterns of behavior and interaction were identified in this study. In the pattern of patient adoption, it was revealed that critical care nurses focused on their patients and their behavior, and interactions were influenced by the role of the CCU patient's family.

Several studies included the importance of the patient and the patient's family in the work lives and experiences of critical care nurses. Vouzavali et al. (2011) described the nurse-patient relationship as a "shared world" (pp. 143, 144, 147). Nurses in their study saw the patient as "belonging" to them, and they remarked that they experienced "intense relationships" with their patients. Ulrich et al. (2007) affirmed that nurses experienced recognition to be most meaningful when it came from patients. Wiegand and Funk (2012) found that even when nurses were faced with ethical dilemmas, they would make decisions that respected the obligations to their patients. Hughes's (2012) participants said that they would do anything to assist their patients. Vandall-Walker and Clark (2011) stated that critical care nurses either supported family members or set up barriers that family members had to work at to breach, confirming the role of the patient's family in patient adoption.

The pattern of armor display involved verbal and non-verbal communication; coping skills and adaptation; the importance of the critical care nurses' pride in the CCU; and their utilization and display of knowledge and practical skills.

Vouzavali et al. (2011) stated that the critical care nurse becomes "both hero and captive" (p. 144) in her work and

responsibilities toward the patient. Evans et al. (2010) described their experiences of critical care as being in a constant, psychological state of change. These nurses claim that it is important to have a strong personality to persevere throughout difficult situations. Armor display might describe some of the characteristics of such a personality.

The four aspects described as a pattern of armor display were found throughout recent literature. In O'Connell's (2008) reflection, she suggests a degree of emotional detachment when working with critically ill patients. Stievano, De Marinis, Russo, Rocco, and Alvaro (2012) affirmed that nurses experience feelings of achievement of professional dignity when they have the authority to make decisions and utilize their knowledge and skills.

Critical care nurses' utilization and display of knowledge and practical skills were described in many studies to affect nurses' competence and confidence, and are essential elements in the culture of critical care nurses. Hughes (2012) stated that critical care nurses, at times, knew exactly what the patient needed and just asked for a prescription, based on an understanding of the clinical manifestations they had observed in the patient. Stievano et al. (2012) remarked that for these nurses to gain competence, they required life-long learning. This is accomplished by participation in continuous professional development, which might lead to more self-esteem and awareness of their role within their culture. Nurses in their study felt that proving that they were competent and well educated was the only way to earn the respect and dignity of other health professionals.

The critical care culture included patterns of despondency, because of the demands to adjust to the critical care environment due to the exposure to the CCU elements and work load.

Although despondency was not directly described in the literature, it was affirmed by related terms. Wiegand and Funk (2012) found that moral distress, as a result of challenges faced in the critical care environment, had frequently been experienced by critical care nurses in practice. Moral distress in their study resulted in nurses feeling disappointed, distressed, and experiencing psychological and physical exhaustion. These nurses considered leaving their positions and described feelings of decreased morale and reduced job satisfaction. One could argue that despondency would be a result of moral distress.

Cummings (2011) stated that nurses' intent to stay at an institution is affected by certain factors or elements that cause stress in the critical care environment. Although nurses' intent to stay within the critical care environment was not explored in this study, the reality of despondency due to the CCU elements and work load might affect critical care nurses' intent to stay within this environment.

A pattern of sibling-like teamwork was characterized by bonds of cohesion and fight-and-support relationships. This was supported by several studies. Evans et al. (2010) found that nurses deliberately develop supportive relationships

among colleagues to create feelings of safety and belonging. Burston and Tuckett (2012) stated that interpersonal relationships directly influenced the nurses' experience or their reality of moral distress. Price (2013) affirmed that the effective functioning of the critical care nursing team was affected by "power relationships" among team members and, despite frustrations, teamwork within the CCU was important.

The final aspect of this culture included patterns of non-support from management and the medical doctors, as the behavior and interactions of critical care nurses were influenced by the perceived lack of support from management and nurses' ambivalence toward the medical doctors.

The role of management was mentioned in a few recent studies. According to Stievano et al. (2012), emotions experienced by nurses in their study ranged from feelings of abandonment by their organization to a lack of respect and belonging. Results were further supported by Cottingham, Erickson, Diefendorff, and Bromley (2013), who discussed the effects of exclusionary practices, including being ignored by managers. Brunault et al. (2014) showed that nurses' quality of work life is improved by teamwork and perceived organizational support.

The perceived non-supporting role of the medical doctors was supported by Stein-Parbury and Liaschenko (2007). They concluded their study by stating that nurses felt "abandoned, rejected or ignored" when they asked assistance from medical doctors. Hughes's (2012) participants described instances where physicians, not present in the unit, disagreed with the nurses about their assessment of a patient, stating that the nurses were wrong. Stievano et al. (2012) found that a poor nurse-physician relation leads to a loss of professional dignity, high turnover nursing rates, a decrease in the quality of care, and a lower quality of care perceived by patients.

The aim of this study was an exploration of the culture of critical care nurses which resulted in the identification of five patterns of behavior and interaction among nurses in a CCU. Facilitating recognition of wholeness in critical care nurses requires an understanding of the critical care nursing culture that includes these patterns of individual or group behavior and interaction of critical care nurses with one another, their patients, and other health care members.

Limitations

A limitation of this research was the exclusion of enrolled nurses from the study. Enrolled nurses or staff nurses in South Africa receive a diploma in nursing from a nursing education institution usually after a study period of 2 years, with the outcome of being dependent general nursing practitioners under the supervision of RNs. Due to the nature of the in-depth exploration which produced a large amount of data to be analyzed, only registered critical care nurses were selected to participate in the interviews and to keep diaries.

Further exploration with regard to the other actors within this setting could be valuable, especially after the initial data had indicated the role of the entire nursing team, medical doctors, and management in the critical care nursing culture. Increasing numbers of enrolled nurses now utilized within the critical care setting may have a significant impact on the critical care nursing culture. Enrolled nurses may also be affected by their role adjustments within the critical care setting. Studies with the focus specifically on enrolled nurses in this setting could not be found.

Another limitation of this study was the lack of response from participants toward keeping a diary, resulting in a loss of possible personalized accounts that could have added value to the results. Nurses found it difficult to keep a diary, but they were used to completing a structured CCU chart and adding a progress report to this factual chart to describe their actions, decision making, and conclusions. It might be useful to rather structure diaries used for data collection in future studies in a similar format, where nurses can provide facts about their work environment and then write a report based on reflection, related to these facts.

Conclusion

The results of this study indicated the existence of a critical care nursing culture. The implication of changes that may either have a negative or positive impact on each pattern of behavior and interaction in the CCU or the culture of critical care nurses should be considered in all efforts to facilitate recognition of wholeness in critical care nurses. After the completion of this case study, the selected critical care unit changed their RN-patient ratio to a ratio of greater than one-to-two RNs per patient, but they included other categories of non-registered nurses. Despite the findings of a study performed by Tschannen and Kalisch (2008) who found that, when more registered nurses than enrolled nurses were used in the critical care setting, the patient's length of stay decreased significantly, changes like these will still be implemented and affect the culture of critical care nurses.

The complexity of the patterns of behavior and interaction within the critical care culture brought to light the need for transformation in the critical care nursing culture. Although not described in this article, we developed a model to facilitate constructive patterns of behavior and interaction in CCUs, based on the findings of this study. An awareness and understanding of the patterns of behavior and interaction in the CCU add to the knowledge base of critical care nursing and empower critical care nurses in the transformation of their practice.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

References

- Agar, M. (2004). We have met the other and we're all nonlinear: Ethnography as a nonlinear dynamic system. *Complexity*, *10*, 16–24. doi:10.1002/cplx.20054
- Attia, A. K., Abd-Elaziz, W. W., & Kandeel, N. A. (2012). Critical care nurses' perception of barriers and supportive behaviours in end-of-life care. *American Journal of Hospice & Palliative Medicine*, *30*, 297–304. doi:10.1177/1049909112350067
- Bray, K., Wren, I., Baldwin, A., St. Ledger, U., Gibson, V., Goodman, S., & Walsh, D. (2010). Standards for nurse staffing in critical care units determined by: The British Association of Critical Care Nurses: The Critical Care Networks National Nurse Leads, Royal College of Nursing Critical Care and In-flight Forum. *Nursing in Critical Care*, *15*, 109–111. doi:10.1111/j.1478-5153.2010.00392.x
- Brunault, P., Fouquereau, E., Colombat, P., Gillet, N., El-Hage, W., Camus, V., & Gaillard, P. (2014). Do transactive memory and participative teamwork improve nurses' quality of work life? *Western Journal of Nursing Research*, *36*, 329–345. doi:10.1177/0193945913493015
- Buechner, F. (1993). Journey towards wholeness. *Theology Today*, *49*, 454–463. doi:10.1177/004057369304900402
- Burston, A. S., & Tuckett, A. G. (2012). Moral distress in nursing: Contributing factors, outcomes and interventions. *Nursing Ethics*, *20*, 312–324. doi:10.1177/0969733012462049
- Çobanoğlu, N., & Algier, L. (2004). A qualitative analysis of ethical problems experienced by physicians and nurses in intensive care units in Turkey. *Nursing Ethics*, *11*, 444–458. Available from <http://nej.sagepub.com>
- Comrie, R. W. (2012). An analysis of undergraduate and graduate student nurses' moral sensitivity. *Nursing Ethics*, *19*, 116–127. doi:10.1177/0969733011411399
- Cottingham, M. D., Erickson, R. J., Diefendorff, J. M., & Bromley, G. (2013). The effect of manager exclusion on nurse turnover intention and care quality. *Western Journal of Nursing Research*, *35*, 970–985. doi:10.1177/0193945913483880
- Cowling, W. R., Smith, M. C., & Watson, J. (2008). The power of wholeness, consciousness, and caring: A dialogue on nursing science, art, and healing. *Advances in Nursing Science*, *31*, E41–E51.
- Creswell, J. W. (2013). *Qualitative inquiry & research design. Choosing among five approaches*. Los Angeles: SAGE.
- Cronqvist, A., Theorell, T., Burns, T., & Lützen, K. (2004). Caring about—Caring for: Moral obligations and work responsibilities in intensive care nursing. *Nursing Ethics*, *11*, 64–76. Available from <http://nej.sagepub.com>
- Cummings, C. L. (2011). What factors affect nursing retention in the acute care setting? *Journal of Research in Nursing*, *16*, 489–500. doi:10.1177/1744987111407594
- Denzin, N. K. (1989). *Interpretive interactionism*. Newbury Park, CA: SAGE.
- Denzin, N. K., & Lincoln, Y. S. (2011). *The SAGE handbook of qualitative research*. Los Angeles: SAGE.
- Dodek, P., Cahill, N. E., & Heyland, D. K. (2010). The relationship between organizational culture and implementation of clinical practice guidelines: A narrative review. *Journal of Parenteral & Enteral Nutrition*, *34*, 669–674. doi:10.1177/0148607110361905
- Drews, F. A. (2013). Human factors in critical care medical environments. *Reviews of Human Factors and Ergonomics*, *8*, 103–148. doi:10.1177/1557234X13493250
- Evans, J., Bell, J. L., Sweeney, A. E., Morgan, J. I., & Kelly, H. M. (2010). Confidence in critical care nursing. *Nursing Science Quarterly*, *23*, 334–340. doi:10.1177/0894318410380253
- Fray, M. (2011). Literature review of the impact of nurse practitioners in critical care services. *British Association of Critical Care Nurses*, *16*, 58–66. doi:10.1111/j.1478-5153.2010.00437.x
- The Free Dictionary Online. (2013). Farlex, Inc [Online dictionary]. Available from <http://www.thefreedictionary.com>
- Gaudine, A., LeFort, S. M., Lamb, M., & Thorne, L. (2011). Clinical ethical conflicts of nurses and physicians. *Nursing Ethics*, *18*, 9–19. doi:10.1177/0969733010385532
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, *18*, 59–82. doi:10.1177/1525822X05279903
- Gurses, A. P., & Carayon, P. (2005). Identifying performance obstacles among intensive care nurses. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, *49*, 1019–1023. doi:10.1177/154193120504901104
- Henneman, E. A., Gawlinski, A., Blank, F. S., Henneman, P. L., Jordan, D., & McKenzie, J. B. (2010). Strategies used by critical care nurses to identify, interrupt, and correct medical errors. *American Journal of Critical Care*, *19*, 500–509. doi:10.4037/ajcc2010167
- Hensel, D. (2011). Relationships among nurses' professional self-concept, health, and lifestyles. *Western Journal of Nursing Research*, *33*, 45–62. doi:10.1177/0193945910373754
- Hickman, R. L., Jr., Daly, B. J., Douglas, S. L., & Burant, C. J. (2012). Evaluating the critical care family satisfaction survey for chronic critical illness. *Western Journal of Nursing Research*, *34*, 377–395. doi:10.1177/0193945911402522
- Hov, R., Hedelin, B., & Athlin, E. (2007). Being an intensive care nurse related to questions of withholding or withdrawing curative treatment. *Journal of Clinical Nursing*, *16*, 203–211.
- Hughes, L. C. (2012). Bridging the gap between problem recognition and treatment: The use of proactive work behaviour by experienced critical care nurses. *Policy, Politics, & Nursing Practice*, *13*, 54–63. doi:10.1177/1527154412443286
- Kim, S. C., Yates, A. D., Graham, P., & Brown, C. E. (2011). Family-provider alliance program in intensive care units. *Clinical Nursing Research*, *20*, 245–262. doi:10.1177/1054773811403471
- Leininger, M. (1997). Overview of the theory of culture care with the ethn nursing research method. *Journal of Transcultural Nursing*, *8*, 32–51.
- McGettrick, K. S., & O'Neill, M. A. (2006). Critical care nurses—Perceptions of 12-h shifts. *Nursing in Critical Care*, *11*, 188–197. Retrieved from [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1478-5153](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1478-5153)
- McGibbon, E., Peter, E., & Gallop, R. (2010). An institutional ethnography of nurses' stress. *Qualitative Health Research*, *20*, 1353–1378. doi:10.1177/1049732310375435
- Meyer, S. J. (1989). How shall I be whole? Perspectives on the meaning of wholeness. *Currents in Theology and Mission*, *16*, 115–120.
- Mullarkey, M., Duffy, A., & Timmins, F. (2011). Trust between nursing management and staff in critical care: A literature review. *Nursing in Critical Care*, *16*, 85–91. doi:10.1111/j.1478-5153.2010.00404.x
- Newman, M. A. (2003). A world of no boundaries. *Advances in Nursing Science*, *26*, 240–245.

- O'Connell, E. (2008). Therapeutic relationships in critical care nursing: A reflection on practice. *Nursing in Critical Care, 13*, 138–143. doi:10.1111/j.1478-5153.2008.00273.x
- Palda, V. A., Bowman, K. W., McLean, R. F., & Chapman, M. G. (2005). "Futile" care: Do we provide it? Why? A semistructured, Canada-wide survey of intensive care unit doctors and nurses. *Journal of Critical Care, 20*, 207–213.
- Pretorius, R. (2009). *Positive practice environments in critical care units: A grounded theory* (Doctoral thesis, North-West University, Potchefstroom, South Africa). Retrieved from <http://dspace.nwu.ac.za/handle/10394/4005>
- Price, A. M. (2013). Caring and technology in an intensive care unit: An ethnographic study. *Nursing in Critical Care, 18*, 278–288. doi:10.1111/nicc.12032
- Schluter, J., Winch, S., Holzhauser, K., & Henderson, A. (2008). Nurses' moral sensitivity and hospital ethical climate: A literature review. *Nursing Ethics, 15*, 304–321. doi:10.1177/0969733007088357
- Schmalenberg, C., & Kramer, M. (2007). Nurse-physician relationships in hospitals: 20000 tell their story. *Critical Care Nurse, 29*, 74–83. Available from <http://ccn.aacnjournals.org>
- Scribante, J., & Bhagwanjee, S. (2007). National audit of critical care resources in South Africa—Nursing profile. *South African Medical Journal, 97*, 1315–1318.
- Sibbald, R., Downar, J., & Hawryluck, L. (2007). Perceptions of "futile care" among caregivers in intensive care units. *Canadian Medical Association Journal, 177*, 1201–1208.
- Singh, J. A., Nkala, B., Amuah, E., Mehta, N., & Ahmad, A. (2003). The ethics of nurse poaching from the developing world. *Nursing Ethics, 10*, 666–670. doi:10.1191/0969733003ne655oa
- Stein-Parbury, J., & Liaschenko, J. (2007). Understanding collaboration between nurses and physicians as knowledge at work. *American Journal of Critical Care, 16*, 470–477. Available from <http://www.ajconline.org>
- Stievano, A., De Marinis, M. G., Russo, M. T., Rocco, G., & Alvaro, R. (2012). Professional dignity in nursing in clinical and community workplaces. *Nursing Ethics, 19*, 341–356. doi:10.1177/0969733011414966
- Tesch, R. (1990). *Qualitative research: Analysis types and software tools*. London, England: Falmer Press.
- Towell, A. J. (2011). *Model of emotional intelligence for the facilitation of wholeness of critical care nurses in South Africa* (Doctoral thesis, University of Johannesburg, South Africa). Available from <http://ujdigispace.uj.ac.za/handle/10210/5370>
- Tschannen, D., & Kalisch, B. J. (2008). The effects of variations in nurse staffing on patient length of stay in the acute care setting. *Western Journal of Nursing, 31*, 153–169. doi:10.1177/0193945908321701
- Ulrich, B. T., Woods, D., Hart, K. A., Lavandero, R., Leggett, J., & Taylor, D. (2007). Critical care nurses' work environments value of excellence in Beacon Units and Magnet Organizations. *Critical Care Nurse, 27*, 68–77. Available from <http://ccn.aacnjournals.org>
- Urden, L. D., Stacy, K. M., & Lough, M. E. (2006). *Thelan's critical care nursing. Diagnosis and management*. St Louis, MO: Mosby-Elsevier.
- Vandall-Walker, V., & Clark, A. M. (2011). It starts with access! A grounded theory of family members working to get through critical illness. *Journal of Family Nursing, 17*, 148–181. doi:10.1177/1074840711406728
- Vouzavali, F. J. D., Papathanassoglou, E. D. E., Karanikola, M. N. K., Koutroubas, A., Patiraki, E. I., & Papadatou, D. (2011). "The patient is my space": Hermeneutic investigation of the nurse-patient relationship in critical care. *Nursing in Critical Care, 16*, 140–151. doi:10.1111/j.1478-5153.2011.00447.x
- Wiegand, D. L., & Funk, M. (2012). Consequences of clinical situations that cause critical care nurses to experience moral distress. *Nursing Ethics, 19*, 479–489. doi:10.1177/0969733011429342
- World Health Organization. (2006). *The world health report 2006: Working together for health*. Geneva, Switzerland: WHO Press. Retrieved from <http://www.who.int/whr/2006/en/>

Author Biographies

Suegnè Scholtz, RN, DCur, is a student of nursing science, University of Johannesburg, Johannesburg, South Africa.

Elsabe W. Nel, RN, PhD, is a professor of nursing science, University of Johannesburg, Johannesburg, South Africa.

Marie Poggenpoel, RN, PhD, is a professor of nursing science, University of Johannesburg, Johannesburg, South Africa.

Chris P. H. Myburgh, HED, BSc(Honns), MComm, DEd, is a professor of psychology of education, University of Johannesburg, Johannesburg, South Africa.