Critical thinking: perspectives and experiences of critical care nurses

by
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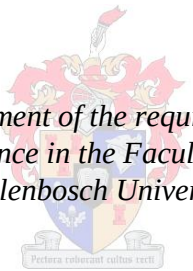

Thesis presented in fulfilment of the requirements for the degree of Master of Nursing Science in the Faculty of Health Sciences at Stellenbosch University

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December 2012

DECLARATION

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ABSTRACT

The increasingly complex role of the critical care nurse in an intensive care environment demands a much higher level of critical thinking and clinical judgment skill than ever before. Critical thinking in nursing practice may be defined as the cognitive ability to analyse, predict and transform knowledge, ensuring quality nursing care. To reason from a nurse's perspective requires that we learn the content of nursing; this includes the concepts, ideas and theories of nursing. The aim and objectives of the study were to explore critical care nurses' perspectives and experiences with regards to the concept of critical thinking, facets influencing the application of critical thinking skills in clinical practice and how these impact on the delivery of quality nursing care.

A qualitative approach, using a case study design was utilised. A sample of six participants, who met the study inclusion criteria and consented to participate, were interviewed individually. Subsequently, five of these six participants took part in a focus group discussion to capture additional data to clarify and enrich the individual interview data. A field worker was present during the interviewing processes to note non-verbal data and later verify transcribed data.

Feasibility of the proposed study was established by conducting a pretest which elicited relevant information. Ethical approval for the study was obtained from the Health Research Ethics Committee at the Faculty of Medicine and Health Sciences, Stellenbosch University. Permission and consent was obtained from the relevant hospital group to interview nurses working in the intensive care units.

Qualitative content analysis, which focuses on the content or contextual meaning, was used to analyse interview data. Coding of the data through emergent themes and sub-themes was done by the researcher and supported through independent coding to verify and strengthen the analysis and interpretation of the researcher. .

The results depicted how the participants personally understood the concept of critical thinking and the components influencing the application of critical thinking skill in clinical practice. The study of the participants' perspective of the concept of critical thinking and portrayed how they experience analytical and independent thinking, competence and

confidence, as well as knowledge, skill and expertise, to influence the quality of patient care.

The data revealed several themes that facilitated critical thinking in critical care nurses. These themes were ‘team support’, ‘experience and exposure’ and ‘empowering the mind’. Emergent themes elaborating the limitations of critical thinking included ‘being stressed’, ‘professional boundaries’ and ‘being busy’.

Several recommendations and suggestions for future research were offered.

OPSOMMING

Die toenemende komplekse rol van die kritieke-sorgverpleegster in ’n intensiewe-sorg omgewing verg ’n veel hoër vlak van kritiese denke en ’n kliniese oordeelvaardigheid as ooit tevore. Kritiese denke in ’n verplegingspraktyk kan gedefinieer word as die kognitiewe vermoë om te kan analiseer, om vooruit situasies te kan bepaal en die vermoë om kennis te omskep sodat kwaliteit verpleegsorg verseker kan word. Om soos ’n verpleegster te kan dink, stipuleer dat die inhoud van verpleging geleer moet word wat konsepte, idees en teorieë daarvan insluit.

Die doel en oogmerke van die studie is om die ervarings en perspektiewe van kritieke-sorgverpleegsters te ondersoek, met betrekking tot die konsep van kritiese denke, fasette wat die toepassing van kritiese denkvaardighede in ’n kliniese praktyk beïnvloed en die impak daarvan op die lewering van kwaliteit verpleegsorg.

Die metodologie wat toegepas is, is ’n kwalitatiewe benadering deur middel van ’n gevalle-studie ontwerp. ’n Steekproefgrootte van ses deelnemers wat aan die inklusiewe kriteria voldoen het, is mee onderhoude individueel gevoer en daarna is met vyf van hierdie ses deelnemers in ’n fokusgroep onderhoude gevoer ten einde data op te neem wat andersins verlore kon geraak het. ’n Veldwerker was teenwoordig gedurende die proses van onderhoudvoering om die opgeneemde en getranskribeerde data te verifieer.

Die data-insamelingsinstrument is in die vorm van ’n onderhoudsgids ontwikkel om die navorser gedurende die onderhoudvoering te help. ’n Loodsondersoek is uitgevoer om die haalbaarheid van die voorgestelde studie te ondersoek en is sodoende geskep om relevante inligting te onthul. Etiese goedkeuring vir die studie is verkry van die Gesondheidsnavorsing Etiese Komitee aan die Fakulteit van Geneeskunde en Gesondheidswetenskappe, Universiteit Stellenbosch. Goedkeuring en toestemming is van die hospitaalgroep aan wie die hospitaal behoort verkry, waar die studie onderneem is om sodoende onderhoude te kan voer met verpleegsters wat in die intensiewe-sorgeenhede werk.

’n Primêre, kwalitatiewe inhouds analise is gebruik om omderhoud data te analiseer wat fokus op die inhoud of kontekstuele betekenis daarvan. Kodering van die data deur die toepassing van die temas en sub-temas wat voorgekom het, is deur die navorser gedoen.

Die data is onafhanklik gekodeer om die analise en interpretasie van die navorser te verifieer en te bekragtig ten einde die akkuraatheid en getrouheid in die formulering van die betekenis en interpretasie van gebeure met juiste weergawe daarvan, te verseker.

Die resultate wat as hooftemas vanuit die individuele onderhoude voortgespruit het, asook die van die fokusgroep het die deelnemers se eie begrip van die konsep van kritiese denke en komponente wat die toepassing van kritiese denkvaardigheid in 'n kliniese praktyk beïnvloed, getoon. Die konsep van kritiese denke het die wyse waarop analitiese en onafhankilke denke, bevoegdheid en selfvertroue, asook kennis, vaardigheid en kundigheid die kwaliteit van pasiëntsorg beïnvloed, uitgebeeld.

Die voortkomende data het daartoe aanleiding gegee dat die faktore wat die fasilitering en beperking van kritiese denke beïnvloed, bespreek kon word. Data rakende fasilitering het getoon hoedat die ondersteuning van die span, ervaring, blootstelling en die verruiming van die gees, kritieke-sorgverpleegsters positief kan beïnvloed om kritiese denke in hulle daaglikse verplegingsaktiwiteite effektief te kan toepas. Data wat verband hou met beperkings het getoon hoedat stres, professionele kwessies en besigwees kritieke-sorgverpleegsters negatief kan beïnvloed in die toepassing van kritiese denke gedurende daaglikse verplegingsaktiwiteite.

Verskeie aanbevelings vir toekomstige navorsing is voorgestel.

ACKNOWLEDGEMENTS

My sincere thanks and acknowledgement to:

- Our Heavenly Father, for granting me the strength to persevere;
- My supervisor Janet Bell, for her continuous guidance, support and expertise;
- My husband Gavin, who simply held my hand all the way;
- My son Shane, for always being there;
- My sister Ceridwyn, for encouraging me to develop professionally;
- My sister Shannon, for being the best role model;
- My mom Lucia, who always asked ‘how’s the learning going?’
- My family and friends, thanks for your thoughts and inspiration.

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LIST OF ACRONYMS

SANC – South African Nursing Council

IABP – Intra-abdominal balloon pump

DEFINITION OF TERMS

Registered Professional Nurse

Refers to persons registered by the South African Nursing Council (SANC) in terms of Act No.33, 2005 as a Registered Professional Nurse employed permanently by the private healthcare sector on a full time basis working in an intensive care environment (Government Gazette, 2006:6).

Critical Care Nurse

Refers to persons registered by the SANC in terms of Act No.33, 2005 as a Registered Professional Nurse working in a critical care environment (Government Gazette, 2006). For the purpose of this study, registered nurses who were permanently employed as well as those working through a nursing agency, with more than one year of clinical experience in an intensive care environment were included. This included registered nurses who had completed postgraduate training in critical care nursing as well as those who have not completed the training.

Intensive care environment

The area in a hospital where specialised nursing care of patients with severe compromise to the functioning of one or more organ systems occurs. This area provides for the monitoring, management and support of patients with actual or potential life-threatening diseases where life support techniques and technology are required to sustain the patient until recovery (Stedman's Concise Medical Dictionary for the Health Professions, 2001:505).

Critical thinking

Critical thinking is the disciplined, intellectual process of applying skilful reasoning as a guide to belief or action. Critical thinking in nursing is the ability to think in an organised and efficient manner, with openness to question and to reflect on the reasoning process used to ensure safe nursing practice and quality care (Heaslip, 2008:834).

Perspective

A way of regarding situations or facts and judging their relative importance (Collins Essential English Dictionary, 2003:574).

CHAPTER 1: SCIENTIFIC FOUNDATION OF THE STUDY

1.1 INTRODUCTION

All acts in nursing are profound and significant; nursing is never a trivial or hasty activity (Heaslip, 2008:836). Heaslip (2008:834) continues by saying that to be able to think like a nurse, one must master the theories, concepts and ideas of nursing; therefore nurses are obliged to read, write, listen and speak critically. By doing so, nurses will ensure that they develop and in-depth understanding of nursing as a clinical practice profession.

A paradigm shift in nursing has taken place and there is a growing recognition that critical thinking skills are essential for nurses to evolve in a profession where new knowledge and adapted skills emerge on a continuous basis (Jones & Morris, 2007:109). Nurses function in an intricate, fast-paced and ever-changing environment, all the more evidenced in an intensive care environment where nurses are often faced with complex situations involving a variety of complications and critically ill patients. To function effectively and efficiently in the critical care environment, the critical care nurse must apply critical thinking in clinical practice, thus adding value to these situations (Edwards, 2007:303).

The way a nurse thinks and behaves is influenced by the integration of theoretical knowledge obtained in the classroom and psycho-motor skills learned in clinical practice, this enables the nurse to think through a situation and to intervene accordingly (Lisko & O'Dell, 2010:106). Knowledge and cognitive ability enhances the independent problem solving that underpins quality patient care (Meyer & van Niekerk, 2008:83). Critical thinking, namely, developing skills in critical, creative thinking processes and thoughtful application, is necessary for the correlation of theory and practice (Meyer & van Niekerk, 2008:83).

1.2 RATIONALE

Through clinical practice in an intensive care environment the researcher has noted inconsistencies amongst personnel in the use of critical thinking. If one considers that critical thinking in nursing is the capacity to think in a transparent, systematic and reasonable manner; to question and reflect on logical conclusions to ensure safe and quality care (Heaslip, 2008:834), then one realises it is imperative for nurses to apply this type of thinking consistently in a dynamic intensive care environment.

Critical thinkers practise the cognitive skill of analysing and transforming knowledge (Distler, 2007:53-56). The increasingly complex role of the nurse requires a much higher level of thinking, clinical judgment skill and professional competency than before (Lisko & O'Dell, 2010:108).

The increasingly complex role of the nurse allows for increased opportunities to apply critical thinking and to use clinical experiences to improve patient care by the correlation between theory and practice (Lisko & O'Dell, 2010:106). Correlation of theory and practice promotes the development of critical thinking skills which enhance the professional autonomy of nurses in clinical practice in an intensive care environment. It is important to recognise that the theory or subject content is not the main focus; rather the emphasis is placed on dealing with the content in a thoughtful manner by applying critical thinking skills to fill the gap between theory and practice (Meyer & van Niekerk, 2008:81).

Critical analysis and application of subject content into real nursing situations facilitates theory and practice correlation. Critical care nurses should acquire the ability to independently evaluate relevant and appropriate theoretical content through developing their critical-analytical reasoning (Meyer & van Niekerk, 2008:81). However, value tends to be given to academic knowledge rather than to clinical nursing knowledge, which leads to a separation of theoretical and practical skills. The actual experience of nursing in the clinical setting receives limited attention in textbooks and is often skewed to highlight the necessary learning. Nurses may tend to distance the academic setting from what they experience in the clinical environment (Meyer & van Niekerk, 2008:83).

Critical care nurses should reflect on and evaluate their critical thinking skills in order to gain insight into their behaviour and attitudes as perceived by others. This reflection will facilitate the integration of new ideas, experiences and knowledge into practice. Critical care nurses should be motivated to network with colleagues who are developing critical thinking skills so that experiences and insights can be shared and analysed (Quinn & Hughes, 2007:69).

The failure to apply theoretical concepts to patient care is a well-known phenomenon in nursing. It not only affects the personal and intellectual development of nurses but has a direct impact on the quality of patient care (Meyer & van Niekerk, 2008:81-83). Practical experiences should be illuminated and evaluated by theoretical knowledge and then further

defined and extended into future practice (Ehrenberg & Haggblom, 2007:68). Critical care nurses may be overwhelmed by the cognitive ability expected of them thus affecting their academic and personal growth (Meyer & van Niekerk, 2008:81). In an intensive care environment where situations may be unpredictable, applying principles in a logical, organised manner as illustrated in textbooks may compromise the quality of patient care. An effective method of enhancing theory and practice correlation is through critical reasoning ability. Without this ability nurses may lose confidence in their own skill which impacts their nursing practice.

The development of abstract thinking skill is also encouraged in the promotion of integration of theory and practice in the clinical environment (Meyer & van Niekerk, 2008:81). Critical thinking is most likely to occur and continue when practised repeatedly and supported by others. It is important to promote the concept of nurses being able to demonstrate critical thinking skill in the clinical setting (Edwards, 2007:306).

An example of this key concept is briefly discussed using a case study: A 65 year old male patient is admitted to an intensive care unit following persistent chest pain; coronary angiography reveals triple vessel disease. An intra-aortic balloon pump (IABP) is inserted to provide cardiac support while coronary artery bypass surgery is considered. In order to provide competent care to this patient, the critical care nurse allocated his care must have a clear understanding of the pathophysiology of triple vessel disease, the impact of this diagnosis on the patient's haemodynamic status as well as of possible acute complications that may arise. She must also have a clear understanding of the purpose and function of the IABP as well as how to use the device to maximise the patient's support. She must be aware of all possible complications the IABP could initiate as well as how to identify and manage these until medical support arrives; and significantly, she must have a clear understanding of the emotional and psychological impact the diagnosis, acute interventions and possible surgery may have on her patient. In order to competently weave together all these aspects (as well as other aspects related to the patient's prescribed treatment like family, other colleagues, the facilities, etc.), the critical care nurse must be able to think critically; be able to weigh up the risks and benefits; be able to view the holistic picture presented and then be able to move forward with the most appropriate care for this patient. Optimal patient care and management of the device (IABP) requires the critical care nurse to use critical thinking skills and ability to ensure safe, quality nursing care.

1.3 PROBLEM STATEMENT

Based on the discussion provided and clinical experience, it appears that critical care nurses do not consistently apply critical thinking in the care of their patients. This may influence the integration of theory into practice, possibly impacting on the delivery of safe, high quality critical care nursing.

1.4 RESEARCH QUESTIONS

a) What are nurses' perspectives and experiences with regards to the concept of critical thinking in clinical critical care practice?

b) What influences the application of critical thinking skills by critical care nurses in clinical critical care practice?

1.5 RESEARCH AIM

The aim of this study was to explore critical care nurses' perspectives and experiences with regards to applying critical thinking skills in clinical practice in order to facilitate their delivery of quality nursing care.

1.6 RESEARCH OBJECTIVES

- To explore the critical care nurse's perspectives and experiences of critical thinking in clinical practice.
- To describe the critical care nurse's perspectives of what influences the application of critical thinking skills in clinical practice.

1.7 RESEARCH METHODOLOGY

Research methodology is the science dealing with principles of procedure in research and study resulting in an increase in knowledge, which in turn contributes to the existing body of knowledge (Brink, 2007:2).

1.7.1 Research Design

For this research a qualitative approach was applied by means of a case study design. The case study design enables the researcher to explore a phenomenon in context allowing in-depth study of a group of individuals to provide significant amounts of descriptive information (Holloway & Wheeler, 2010:250). A case study can also provide descriptive

information through exploring the causes of the phenomenon or event in addition to describing it (Brink, 2007:110). In this study the phenomenon to be explored is critical thinking including the critical care nurse's related perspectives and experiences thereof.

1.7.2 Population and Sampling

The population for this study comprised of registered professional nurses working in an intensive care environment of a private hospital. In this study a purposive, sampling technique was adopted and the sample drawn from the identified population. Potential participants were approached to join the study by the researcher. These potential participants were chosen taking into consideration their current employment in an intensive care nursing environment, their professional experience, their nursing qualifications and their role within the unit. The sample size was guided by data saturation whereby participants were included until no new or alternative data was elicited from the participants regarding the phenomenon under study. A final sample size of six participants was used. It is important for case study designs that the pool of participants remains relatively small as this allows the researcher to analyse and understand similarities and differences within a specific setting.

1.7.3 Inclusion Criteria

Registered professional nurses working in a critical care unit of a private hospital; this included permanently employed and agency staff with more than one year professional experience in an intensive care environment.

1.7.4 Exclusion Criteria

Enrolled nurses, enrolled auxiliary nurses and care workers.

1.7.5 Data Collection

In this study critical thinking was the main focus with concept understanding and mechanisms influencing the application of critical thinking explored. A combined method of data collection was used. Phase one was comprised of detailed individual interviews to explore the critical care nurses' perspectives and experiences of critical thinking in clinical practice. Phase two was comprised of a focus group of these same participants which revealed important concepts which may otherwise have been lost.

Individual interviews were conducted as they appeared to be the most appropriate method of data collection for this study. These were then followed by a focus group interview of these same participants to confirm and elaborate on the data from the individual interviews. The interview guide contained broad questions developed by the researcher which were posed to all the participants. Based on the individual answers, additional prompting and investigative questions were posed to the participants to elicit a full explanation of their experiences. The development of these questions was guided by the reviewed literature, the problem statement and the aim and objectives of the study. All interviews were conducted in English.

A field worker took notes while the researcher conducted the interviews and focus group; this enhanced the transcription of recordings (see appendix B) by observing non-verbal communication which assisted in identifying specific themes. All recorded and transcribed data was verified by the field worker. Permission was obtained from the participants to record the interviews and to have a field worker present during interviewing. The interviews and focus group were recorded on a tape recorder with a backup recorder to overcome any technical issues.

1.7.6 Data Analysis

Qualitative research allows for the integrated collection and analysis of data. Qualitative content analysis was used to analyse transcribed interview data and focused on the characteristics of language with attention to the content or contextual meaning thereof. The aim was to gain knowledge and understanding of the phenomenon under study (Hsiu-Fang & Shannon, 2005:1277). Conventional content analysis is generally used to describe a phenomenon. The researcher immerses him/herself in the data allowing new insights to emerge; this may also be described as inductive category development. The advantages of conventional content analysis are that preconceived categories are not imposed on the data as information is gained direct from study participants (Hsiu-Fang & Shannon, 2005:1279).

Data analysis commenced with the researcher reading all data repeatedly, word by word and line by line, to achieve immersion and to obtain a sense of the data as a whole. Exact words were extracted to capture key concepts or thoughts. Following this the researcher made notes of her own first impressions and thoughts. As the process continued, codes began to emerge which then became the initial coding scheme. These codes were then divided into categories based on their links and relationships. Emergent categories were

used to organise and cluster codes into meaningful groups which were then defined. The data was independently coded to verify and strengthen the analysis and interpretation, while simultaneously generating additional information; this was done to add value to the trustworthiness of the study.

1.7.7 Trustworthiness

Trustworthiness is concerned with accuracy and truthfulness. Trustworthiness is an attempt to access the meaning and interpretation of an event with accurate reflection thereof (Brink, 2007:118).

1.7.7.1 Credibility

Credibility refers to the extent to which a study has recorded the fullness and essence of the reality (Rule & John, 2011:107). Credibility, in this study, is enhanced by utilising a variety of sources, these being the individual interviews as well as a single focus group of the same participants.

1.7.7.2 Transferability

Transferability refers to the degree to which the results of a study are applicable in another context or setting (Brink, 2007:119). In this study, a detailed description of the context, participants, methodology and data analysis will provide others with sufficient information to decide whether the study findings are transferable to their context.

1.7.7.3 Dependability

An audit is required to establish the truthfulness of the study by examining the processes and procedures used to determine whether they are acceptable and dependable (Brink, 2007:119). To ensure dependability of this study, data obtained from the interviews and focus group was captured on two tape recorders. The researcher took notes while conducting the interviews using an interview guide (see appendix A) and included copies of a transcript and the focus group (see appendix B).

1.7.7.4 Confirmability

Confirmability ensures that the findings, conclusions and recommendations are supported by the actual evidence and the researcher's interpretation thereof (Brink, 2007:119). In this study, recorded and transcribed data was discussed in detail and verified by the field worker after each interview and focus group;

1.8 PRETEST INSTRUMENT

A pretest is done to investigate the feasibility and measurability of the data collection instrument (Brink, 2007:166). Interviews with two critical care nurses were conducted under the same circumstances as the actual study. This enabled the researcher to recognise and address any shortfalls before the actual data collection commenced. The relevance, clarity, grouping and effectiveness of the questions and interview guide were also established. The results of the pretest instrument were not included in the actual study.

1.9 ETHICAL CONSIDERATIONS

The researcher is responsible for conducting research in an ethical manner and failure to do so may have negative consequences (Brink, 2007:30).

1.9.1 Quality of the Research

The researcher adhered to the required standards of evaluation, planning and implementation of the project. Honesty and good faith was adhered to, ensuring trustworthiness. Permission was given by the Health Research Ethics Committee at the Faculty of Health Science, Stellenbosch University (see appendix C). The researcher has successfully completed Research Methods and Contemporary Health Nursing Practice modules at Stellenbosch University. Full supervision was available throughout the research process.

1.9.2 Consent

In this study written informed consent was obtained before each interview and the focus group as well as consent to record the interviews and focus group. A detailed explanation of the study was given ensuring participants were aware of their right to self-determination, meaning that they could choose to withdraw at any stage without repercussion (Brink, 2007:35). Permission was given by a private hospital group in the Western Cape to conduct the study.

1.9.3 Confidentiality, Anonymity and Privacy

Every effort was made to ensure confidentiality, anonymity and privacy in this study but this could not be guaranteed. *Confidentiality:* It is the researcher's responsibility to prevent data collected during the study from being made available to other persons. This was done by secure storage of data collected by the researcher. *Anonymity:* literally

meaning 'namelessness'. In this study only the researcher was able to identify participants with the tapes as the researcher conducted interviews self and was able to recognise the individual voices of participants. *Privacy:* The researcher respected the participant's right to privacy. The participant has the right to determine which private information will be shared or withheld from others (Brink, 2007:35).

1.10 LIMITATIONS

The results of this study may not apply to all registered nurses working in intensive care units as the research was confined to a single private hospital.

1.11 CONTRIBUTION TO NURSING PRACTICE

It is important to understand how critical care nurses experience their use of critical thinking in clinical practice and how this potentially allows for positive influences to be maximised and negative influences to be removed or corrected, an example of this may be in the fine tuning the communication processes (that is, shift handover sessions, reporting to medical colleagues, nursing ward rounds and so forth). Recommendations based on the evidence obtained in this study were discussed with the critical care participants in order to assist them in applying the findings of the study and thus creating opportunities for critical thinking to be deliberately practised and supported.

1.12 DISSEMINATION OF RESEARCH

A dissertation has been written. Findings will be presented to the personnel of the intensive care unit which participated in the study. By creating awareness and encouraging increased application of critical thinking in the work environment, an anticipated benefit is foreseen by improving the quality of nursing care. The findings may be presented at a critical care congress and possible publication of an article considered.

1.13 STUDY LAYOUT

Chapter 1 - Scientific Foundation of the Study

Chapter 2 - Literature Review

Chapter 3 - Research Methodology

Chapter 4 - Data Analysis

Chapter 5 - Recommendations and Conclusion

1.14 CONCLUSION

The integration of theory and practice in nursing is what makes nursing so unique. Although integration occurs in other professional environments none has such a great an impact as it does in nursing where a patient's health is affected. The integration of theory into practice is dependent upon the nurse's ability to apply critical thinking skills. Therefore, research into the practitioner's perspective of critical thinking and its application into clinical practice are necessary to support safe, high quality critical care nursing. This study explored critical care nurses' understanding of critical thinking and how it affects their clinical practice and delivery of quality nursing care.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Chapter two presents the findings from a review and synthesis of pertinent literature. The purpose of reviewing literature is to develop a better understanding of the nature and meaning of a problem which has been identified, thereby adding to the value of the topic being researched. The literature review provides the framework for the research, placing the research in context and identifying the areas of knowledge which the study is intending to expand upon (De Vos, Strydom, Fouche & Delport, 2005:125).

The literature review presented in this chapter set out to explore the broad concept of critical thinking then narrowed it down to critical thinking of critical care nurses in a clinical intensive care environment. The development and relevance of critical thinking in nursing was highlighted. Integration of theory and practice was discussed while maintaining a holistic approach. A conceptual framework was included to add value to the concept of critical thinking. Literature was again referred to in order to further support and strengthen the findings which emerged during the data analysis. The following chapter provides a detailed description of the literature reviewed for the study.

Qualitative researchers believe that the discovery of meaning is the basis for knowledge and that there is a necessity to describe the aspect being studied, in this case, critical thinking in nurses in an intensive care environment. The researcher in this study felt that it was relevant and appropriate to use a qualitative approach.

The review of literature in this approach was done from a departure point of being aware that there are multiple realities that are defined by the prevailing circumstances and or environment (LoBiondo-Wood & Haber, 2006:89). In this study, the context is an intensive care unit in a private healthcare setting where critical thinking of registered nurses was explored.

2.2 SELECTING AND REVIEWING THE LITERATURE

The process of reviewing the literature for this study was done over a period of 21 months, with continuous expanding and exploring of new issues. Material was selected from electronic databases that included Science Direct, Sagepub, Elsevier Health, Pubmed and

Google Books. Journal articles, searches via article reference lists, periodicals and text books were also utilised. On-going support and assistance from supervisors and library services was beneficial. No material selected was more than ten years old. The majority of the literature selected was pertinent to a nursing environment, although the literature reviewed also overlapped with other disciplines, which was found to be beneficial.

Keywords used during the review include: critical thinking in any discipline, nursing specific discipline, clinical practice, nursing knowledge and skill, nursing education, and integration of theory and practice.

2.3 FINDINGS FROM THE LITERATURE

Findings from the reviewed literature are described in detail under the following headings:

- Critical Thinking in Nursing;
- The Integration of Theory and Practice;
- The Development of Critical Thinking in Clinical Practice;
- The Relevance of Critical Thinking in Critical Care Nursing;
- Facets of Critical Thinking;
- Critical Thinking in Nursing Education;
- Critical Thinking – a Holistic Approach;
- Conceptual Framework.

2.3.1 Critical Thinking in Nursing

Critical thinking is the disciplined, intellectual process of combining proficient reasoning skill with competent use of thinking skill to make sound clinical judgments and decisions. Heaslip (2008:834) notes to think like a nurse requires that we learn the content of nursing, including the concepts, ideas and theories of nursing. This learning allows development of our intellectual capacity and skill so that we become disciplined, self-directed critical thinkers (Heaslip, 2008:834).

Critical thinkers in nursing exhibit confidence, creativity, flexibility, integrity and open-mindedness while practising their craft (Distler, 2007:55). This interrelated cluster of components becomes more important in an intensive care environment due to the necessity for independent thinking and the ability to implement relevant nursing practices for a critically ill patient. Every case and patient is different due to co-morbidities, pre-existing

disease, age and disease profile, therefore the critical care nurse needs to be able to make individual responses to individual problems. This demands that she is able to think flexibly within a framework of practice and may require unique responses from her in order to deliver excellent quality nursing care.

The process of thinking involves being pro-active and quality orientated (Distler, 2007:55). As part of nursing, nurses are taught various mechanisms of decision making, such as, identifying a problem, considering options, selecting an option of action and evaluating their decision thereafter. Within an intensive care environment, pro-active thinking is a necessary approach in order to anticipate and predict possible complications that may occur. A lack of early intervention may have serious adverse effects for the patient.

Quality nursing care entails safe, prompt and expert care. As patient's lives are at stake quality cannot be compromised nor ignored. Critical thinking ensures that nurses are able to respond in a scientifically relevant manner to provide the expert nursing care demanded in a specialist environment. This shows how important the ability to think both pro-actively and with confidence may alter patient outcome.

Critical thinking is an abstract concept therefore there is growing support that critical thinking needs to be defined as discipline specific. Critical thinkers in nursing practice may be defined as having the cognitive skill to analyse, predict and transform knowledge. Critical thinking in nursing is an essential element of professional accountability and quality nursing care (Jones & Morris, 2007:110).

The necessity for critical thinking skills in nursing has grown as the autonomy of nurses has increased (White, 2005:18). This includes autonomy in decision making as doctors are not always present and, as a critical care nurse, having the responsibility of patients at hand. These decisions that impact on the quality of patient care, are based on experience as well as scientific knowledge, training, value and ethics. Critical thinking entails valuable communication, problem solving abilities and dedication (Paul & Elder, 2002:15). Critical thinking cannot happen in isolation and must be communicated in order to be implemented.

According to White (2005:18), nurses who are critical thinkers adhere to certain intellectual standards. They endeavour to be transparent, sound, clear and detailed when reflecting on their quality of thinking. This allows these nursing practitioners to adhere to high

intellectual standards and to be committed to improving thinking skills in order to make sound and safe clinical decisions (White, 2005:18).

Critical thinking skills are imperative for nurses working in an ever-changing environment, to ensure that they evolve and mature in a field where knowledge and skill is never stagnant and nursing staff on duty are never enough (Jones & Morris, 2007:109). Critical thinking may be applied in all spheres of life, by people of all walks of life and in all domains of our work environment; adding value to situations or problems which arise where there is no definitive answer or easy solution (Edwards, 2007:303). This is especially true in nursing as critical thinking can have a positive influence on nurses and through the delivery of safe, comprehensive, individualised and innovative care which stems from the competent clinical judgment of thinking professionals (Jones & Morris, 2007:110).

A paradigm shift in nursing has occurred with a growing recognition that nurses need to rather learn 'how to think' than 'what to think' (Jones & Morris, 2007:109). Nurses also need to learn when to think, fully understanding why that thinking has taken place and the consequences thereof. This ability is important as it also contributes to the nurse's ability to apply their theoretical knowledge in a clinical practice setting.

2.3.2 Integration of Theory and Practice

The experience of nursing in the clinical setting and the information which is discussed in textbooks is rarely correlated effectively in nursing education. This may leave the nurse stranded and unable to apply classroom theory to patient care (Meyer & van Niekerk, 2008:83). There is not always theoretical evidence to support clinical practice, which means there is a need for nurses to incorporate critical thinking processes into practice in order to provide solutions. Each day nurses sift through profuse data and information in order to absorb and adapt knowledge for problem solving in an attempt to find solutions (Edwards, 2007:303). Using experience from clinical practice should greatly improve integration between theory and practice and should be the starting point when teaching problem solving abilities and critical analysis (Ehrenberg & Haggblom, 2007:68).

Critical thinkers think deeply and broadly, striving to be clear and precise while they listen, speak, read and write making their thinking adequate for their intended purpose. While superficial thinking leads to poor practice, critical enquiry is an essential quality of safe

practice. Nurses must pose questions about and be willing to attempt to seek answers to obvious and difficult questions inherent to nursing practice. Nurses who think critically value intellectually demanding situations and are self-confident in their own thoughts (Heaslip, 2008:835).

Guided reflection has been found to bridge the theory-practice gap as both intellectual and affective elements are required in the reflecting process. Interest in learning from experience by means of reflection has increased considerably as it is thought that this process promotes deep learning (Ehrenberg & Haggblom, 2007:68). To act competently in practice, nurses need to make sound decisions. Lacking the ability to think deeply leads to poor practice. Clinical nursing practice requires a greater depth of thinking as nurses encounter increasingly more difficult practical situations; this is a challenging task in nursing (White, 2005:4).

Furthermore, White (2005:41) noted that nurses have evolved from task-orientated skill to professional outcome-based knowledge which reflects a high degree of integration of theory and practice. There are still nurses who see the clinical component of nursing as merely practical training without making a connection to the theory informing and grounding nursing practice. This 'theory-practice gap' appears to be widened by nurses seldom reading up on and applying findings from nursing research to their clinical environment (Ehrenberg & Haggblom, 2007:68). This connection goes beyond thinking to include the necessity for consideration of the impact of various dimensions in the work environment.

Nursing research consists of both basic and applied research. Nursing researchers almost universally agree upon a connection between critical thinking skill and clinical competence, which aids in the delivery of safe, comprehensive and effective care. Research demonstrates that the development of critical thinking in clinical practice is supported by an environment in which critical thinking is valued, promoted and encouraged. Of utmost value is to ensure safe quality nursing care (Quinn & Hughes, 2007:69).

The most commonly cited reason for critical thinking skill being a requirement in nursing is the contribution critical thinking makes to clinical competence (Jones & Morris, 2007:110). Nursing care consists of unique social and psychological dimensions which can

only be experienced in the clinical setting itself (Meyer & van Niekerk, 2008:82-83). Critical thinking is a skill and once recognised, should be practised on a continuous basis to ensure and improve quality of expert nursing care. Without deliberate engagement in critical thinking nurses may be left stranded and unable to correlate theory with practice in the clinical practice arena.

2.3.3 The Development of Critical Thinking in Clinical Practice

Promoting the concept of nurses being analytical practitioners who are capable of demonstrating critical thinking skills in the clinical setting encourages the development of critical thinking amongst nurses. Ultimately, critical thinking needs to be cultivated, developed and practised by urging nurses to make informed decisions and to develop independent thinking. Experienced practitioners should guide practice situations by encouraging staff to make informed decisions so that they can incorporate critical thinking into their everyday practice (Edwards, 2007:307). This is particularly pertinent in an intensive care environment where situations are often unpredictable and complex due to the varying conditions of the patients requiring care.

One very important component in the developing of critical thinking is to the encouragement of active learning and one very important ingredient in developing active learning is to encourage in-depth reflective dialogue. This provides nurses with an opportunity to reflect on their clinical learning experience. Feedback is also important to enhance the quality of learning and experience, allowing nurses to access and reflect on their own performance (Duron, Limbach & Waugh, 2006:163). The dynamic role of the nurse includes developing self-awareness and recognising critical thinking as a means to grow personally and professionally.

2.3.4 The Relevance of Critical Thinking in Critical Care Nursing

It is relevant in all areas of clinical critical care nursing practice for nurses to deal with a range of complicated patient care situations that require quick decision making and problem solving that is vital to the profession (Jones & Morris, 2007:109). Nurses will be unable to solve exclusive and elaborate problems if critical thinking cannot be applied (Edwards, 2007:303). Critical thinking skill includes rational exploration of ideas and extends beyond decision making and problem solving processes. It must be actively nurtured and developed by nurses in order to make appropriate decisions in the best

interests of ensuring that the patient receives the correct intervention for the problem identified in a specialised environment such as an intensive care unit.

Critical thinking is a way of thinking. Critical thinkers work meticulously to improve intellectual integrity. Skilled nursing is also reliant on a deeply rooted nursing philosophy which develops over time (Paul & Elder, 2002:15). According to Heaslip (2008:834), nurses endeavour to be precise, logical and clear. They clearly divulge information that is relevant and significant to patient care and, in addition, eliminate inconsistent and irrelevant thoughts. A nurse's thinking should expand over time. Expertise and knowledge ensure a valuable contribution to the quality of nursing care. In an intensive care environment demands are multiple and complex and a lack of critical thinking during decision making could have negative patient outcomes.

Critical thinking is an essential component for nurses functioning in today's healthcare domain. Internationally, nursing organisations have anticipated the need to develop and inspire higher-order critical thinking to improve professional standards of practice and to stimulate inquiry and promote sound reasoning in practice (Simpson & Courtney, 2007:56).

2.3.5 Facets of Critical Thinking

A number of authors raise similar concerns and detail the fact that there are both factors that enhance, as well as detract from being able to effectively apply critical thinking in a clinical situation. The promotion of critical thinking creates awareness amongst nurses while the encouragement of critical thinking automatically improves the quality of nursing care (Quinn & Hughes, 2007:69). Critical thinking can be a challenge to nurses; therefore an atmosphere of psychological safety must be maintained. Critical thinking should be required in practice but without feeling inadequate or incompetent. Nurses should be motivated to think critically and to constantly evaluate their own progress by critical analysis of their acquired skills (Quinn & Hughes, 2007:69). When developing critical thinkers, it is imperative to listen attentively and sensitively. It is important to be aware of verbal and nonverbal ways of behaving so that informed decisions can be made. Recognising how behaviour is interpreted by others is vital to avoid conflict and misconception (Quinn & Hughes, 2007:69).

Critical thinking plays an important role in handling and managing situations of conflict and in avoiding volatile situations from getting out of control. It is up to the nurse to contain conflict and to manage it effectively. Nurses who begin to think critically constantly need structure and support to develop their self-worth and self-awareness (Quinn & Hughes, 2007:69). The desire and ability to apply critical thinking is destroyed when nurses feel offended or intimidated in a situation. There is also a degree of risk involved as critical thinking may result in changes and upset the status quo and, according to Quinn and Hughes (2007:69), thinking critically may be threatening to people who do not practice it. A balance must be maintained between nurse's integrity and their desired levels of critical thinking. Lack of support for the people who are beginning to think critically may contribute to poor quality nursing care as their application of critical thinking skill may be impaired.

One of the limits to critical thinking is nurses who are satisfied with taking a passive approach to nursing care. Active participation and reflection is an integral part of critical thinking development and must be encouraged in order to provide the greatest benefit to patients (Duron *et al.* 2006:161). To be fully involved and determined to apply critical thinking skill to ensure optimal quality nursing care requires a conscious effort to be actively involved. Various other factors, including limited clinical facilities, nurse shortages and high patient acuity, add to the challenge of using critical thinking skills optimally (Lisko & O'Dell, 2010:106).

Nurse's attitudes also have an influence on nursing practice. Nursing practice performed without care, routinely or without thinking may have a noticeable negative impact. Unfortunately, intuitive nursing practice seems to still be the norm in nursing, in other words, nursing done without conscious reasoning (Paul & Elder, 2006:21). Every effort should be made to make nurses aware of poor quality nursing care and the implications and the repercussions thereof. These instances of poor quality nursing care could be remedied by the appropriate use of critical thinking in decision making.

Knowledge of patient's conditions is imperative. Through deliberate and controlled behaviour nurses can progressively increase their knowledge and skill, ensuring quality patient care. Through the process of acquiring knowledge and skill nurses develop personally and professionally and can take pride in their work. Central to nursing is the search for the best knowledge in a given context. A focused and thorough approach to

clinical practice is valued. As the nurse encounters more complex scenarios in practice he/she is required to think through and reason about nursing in greater depth, thus gaining a deeper meaning of what it means to be a nurse in clinical practice (Heaslip, 2008: 836).

When a nurse considers critical thinking in his/her colleagues Heaslip (2008:835) noted that he/she needs to use intellectual standards to evaluate our thinking as well as the thinking of others when it comes to decision making and problem solving. Nurses must be committed to be self-directed and independent critical thinking by figuring out their own thoughts on the subject at hand (Heaslip, 2008:835). To share and communicate their thought process with a colleague may also benefit each other and contribute value to decision making. Excellent quality nursing care in an intensive care environment is important and should be achieved by reciprocation between the clinical setting and the theoretical knowledge.

2.3.6 Critical Thinking in Nursing Education

The concept of critical thinking has had an indirect yet vital impact on nursing education. Nurse educators are being inspired to teach learners lifelong rational thinking skills for their nursing careers. Furthermore, an ever-changing health care environment encourages nurses to assess new claims for knowledge and new circumstances (Distler, 2007:54). With the much wider range of teaching and learning strategies available to us today, nursing education has expanded exponentially.

Nursing education needs to ensure best practice is established with emphasis on life-long learning and how to learn to think critically. A multiplicity of teaching and learning strategies is being developed to bridge the theory-practice gap. Innovation in teaching may assist nurse educators to work more efficiently in the health care environment globally (Distler, 2007:54). Techniques which encourage critical thinking include placing nurses in an active role of doing something and then reflecting on the meaning of what they are doing. Critical thinking is best understood as the ability of thinkers to take charge of their own thinking and to recognise critical thinking skills amongst colleagues (Duron *et al.*, 2006:160).

The encouragement of self-driven individualised learning will go a long way towards helping nurses to take responsibility for their own learning. This promotes the personal and professional development of the nurse (Ehrenberg & Haggblom, 2007:68). The more

responsibility the nurse is prepared to take for the nursing care that she provides, the better quality nursing care is generally practiced. This implies that the learning is not only theory or teacher–driven and that the possibility of success as a result of the nurse being able to apply the knowledge gained in decision making, is significantly enhanced.

Traditional approaches to nursing education such as didactic lectures, memorisation and rote learning do not lend to the outcome of critical thinkers. Learning is best achieved through experiential learning. Experiential learning is a continuous process of gaining knowledge and knowledge is generated by transforming experience into an existing cognitive framework (Lisko & O'Dell, 2010:106). This process alters the way nurses think and behave. Today's learning environment is more conducive to developing critical thinking skill, which is then able to grow with the individual, at an early stage (Lisko & O'Dell, 2010:106).

Traditional methods of teaching have been supplanted with an environment that encourages interaction and independent thinking, focusing on achievement rather than failure (Distler, 2007:58). A lack of expertise, understanding and perception of the concept of critical thinking among nurse educators has been noted.

Nurse educators frequently have inadequate training to teach critical thinking skill, with much discrepancy about the concept self. As with nurses themselves, nurse educators are also capable of learning and understanding the concept of critical thinking. This would allow them to grow within their own professional environment, to practise critical thinking themselves and then to be able to teach this skill to nursing students. A more mature approach may also add value to teaching strategies. Nursing faculty preparedness is also essential. Findings suggest that nurses with higher critical thinking skill reveal greater academic success (Jones & Morris, 2007:113).

Teaching critical thinking within the discipline of nursing is contextual, that means, specific skill and knowledge must be mastered during the process of nursing education. Critical thinking is promoted by active learning techniques as they simultaneously activate intellectual triggers (Distler, 2007:58). Quinn and Hughes (2007:69) states that teachers themselves should assume a critical thinking technique and become good role models by performing these skills during their everyday teaching. Specific to nursing is the integration of theory and practice which is also a nursing specific skill. Critical thinking is

not an isolated step or single process but rather forms part of many aspects and components coming together simultaneously in an integrated fashion where alternative solutions are considered to make good clinical judgments to ensure the safe nursing care of the patients.

2.3.7 Critical Thinking – A Holistic Approach

To think critically in nursing also includes reading, speaking, listening and writing critically and by doing so a nurse will gain an in-depth knowledge about nursing as a professional practice.

A critical reader enters into a point of view other than his/her own and actively searches for key concepts, ideas, reasons and justifications. Parallel experiences, supporting examples and implications actively engage the reader to interpret and assess the written text accurately. Critical reading is an active cognitive process of engagement (Heaslip, 2008:836). Reading in the form of research and obtaining information from the latest literature is conducive to up-to-date knowledge and practice, enhancing the quality of nursing care that can be delivered. Reading and accurate interpretation of the written word is imperative to ensuring safe problem solving and decision making.

Critical speaking is also an active process of expressing verbally a point of view, ideas and thoughts. This allows others to attain an in-depth understanding of the speaker's personal perspective on a situation. Reflection on how one expresses oneself verbally will ensure maximised and accurate understanding by others of what is actually said. Being open to feedback and active dialogue promotes accuracy of interpretation (Heaslip, 2008:836). Speaking and accurate interpretation of the spoken word is essential to ensure optimal and open communication.

A critical listener enters emphatically and analytically into the perspectives of others. It is a mode of observing how one is listening so as to improve accurate interpretation of what is being said as everything that is spoken has implications (Heaslip, 2008:836). Reflection on how one is listening can be used as a mode of monitoring how accurate an understanding of what the other person is saying one is gaining.

Disciplined writing requires disciplined thinking and disciplined thinking is achieved though disciplined writing. Critical writing arranges ideas into relationships with each other, ensuring truth and accuracy. Ideas and concepts may also be elaborated to make them more intelligible to others. When accuracy and truth are issues then one must

understand how one can support one's ideas by elaboration (Heaslip, 2008:836). Writing and accurate interpretation of the written word is important to ensure that information is relayed accurately and understandably.

The various aspects discussed in this literature review should be considered as elements of a whole study of critical thinking specifically of critical care nurses in an intensive care environment.

2.4 CONCEPTUAL FRAMEWORK

Structures of the various concepts described are combined as a map of the study and this process also provides a rationale for the development of the research questions. The set of concepts are reflected in such a way as to build the conceptual foundation of the study by describing the general meaning of the concepts within the study undertaken using a holistic approach (LoBiondo-Wood and Haber, 2006:58).

Within a nursing context, the critical care nurse's ability to apply critical thinking skill in complex situations, which occur on a regular basis, requires independent thinking. Individual responses to individual problems, once again context specific, lead to accurate decision making and problem solving.

Critical care nurses need to be pro-active to achieve delivery of expert care and to be quality orientated they need to learn how to think. Autonomy of nurses has increased giving them scope to anticipate complications and make decisions using critical thinking skill. Thinking critically requires an active mind with a desire to learn and active participation in effective communication.

The integration of theory and practice requires innovative strategies within nursing education and teaching. Once again, decision making and problem solving demand a higher level of intellect and integrity. Analytical practitioners use critical thinking on a continuous basis with rational exploration of ideas. Alternative solutions can be sought through guided reflection which requires innovative and critical thinking skill. The outcomes of effective critical thinking could lead to good clinical judgment being applied; ensuring safe and excellent quality nursing care.

The diagram below depicts the researcher's view of the conceptual basis of the study showing the nature of the relationships and interconnectedness between the concepts, offering a holistic view of critical thinking.

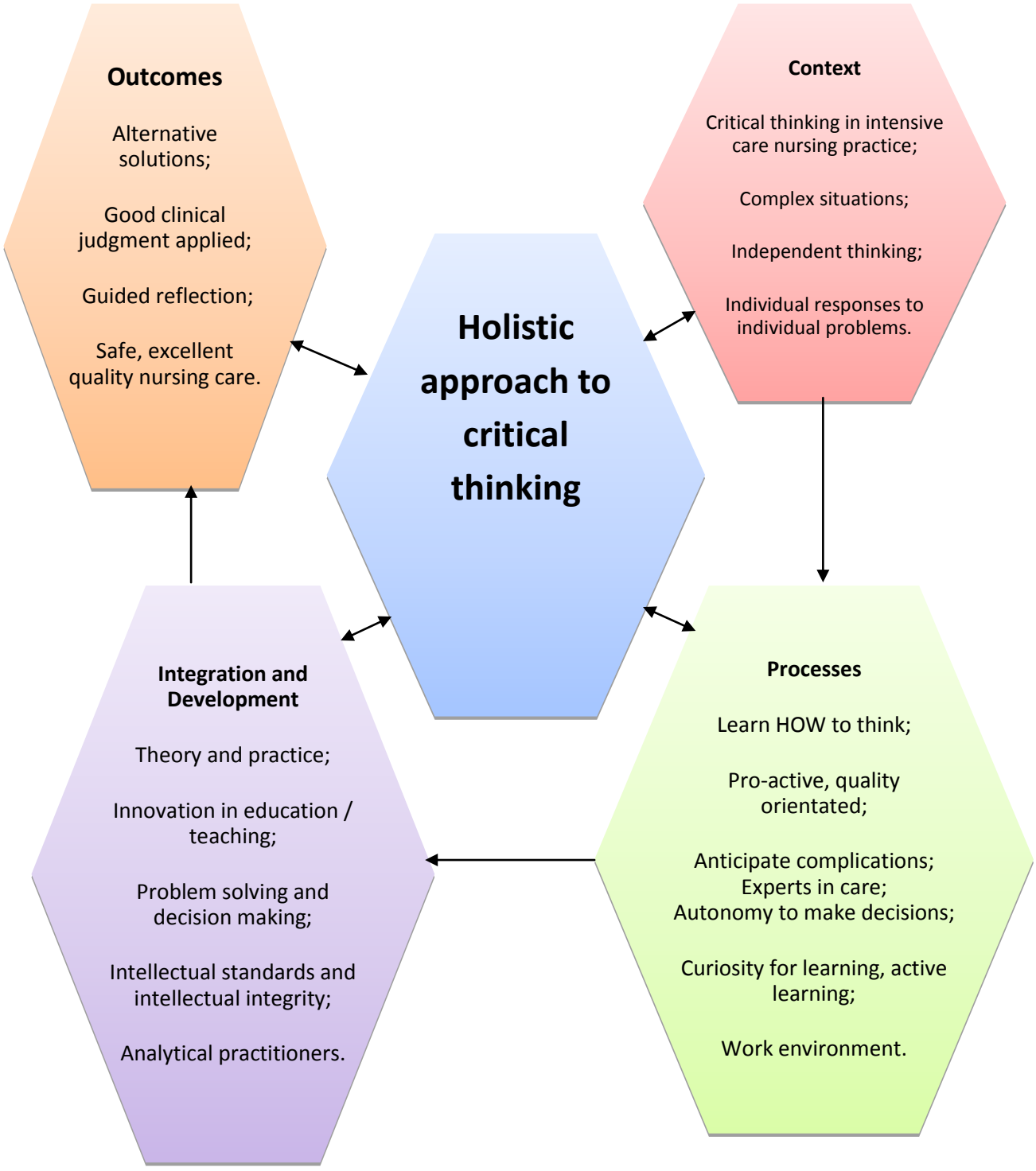

Figure 2.1: Conceptual framework for a Holistic approach to Critical Thinking.

2.5 CONCLUSION

Critical care nursing practice needs critical thinkers to predict, anticipate and identify abnormalities, including changes in patients' conditions that may require quick and decisive action. This involves gathering information and responding appropriately. The influences which facilitate or limit critical thinking in nursing are important contributors to whether aspects such as the integration of theory and practice as well as the effectiveness of problem solving and decision making are successful. Critical thinking can also be taught within the discipline of nursing to enhance good clinical practice.

Critical thinking is needed in clinical practice in order to make a nursing diagnosis. In an intensive care environment an in-depth level of expertise and knowledge is required due to the nature of the environment, the unpredictable course of critical illness and the burden of disease. Patient outcome is highly dependent on the ability and capability of the critical care nurse.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter three presents the research methodology pertaining to this study. The methodology refers to the process or plan for conducting a study (Burns & Grove, 2009:719). Each researcher requires a pre-established plan or idea relating to the phenomenon that will be studied in detail. The process involves a way of studying and gaining knowledge via scientific enquiry. This process follows a specific path irrespective of what you want to discover or which facts you anticipate to learn. The following chapter provides a detailed description of the methodology applied in the study. The methodology for any study is guided by the research question, aim and objectives. As stated in chapter one, the research questions posed for this study are:

- *What are nurse's perspectives and experiences with regards to the concept of critical thinking?*
- *What influences the application of critical thinking skill by critical care nurses in clinical critical care practice?*

The aim is to explore the critical care nurse's perspectives and experiences of critical thinking in clinical practice and to describe the critical care nurse's perspective of what influences the application of critical thinking skills in clinical practice.

3.2 RESEARCH METHODOLOGY

Research methodology is the science dealing with principles of procedure in research and study resulting in an increase in knowledge, which in turn contributes to the existing body of knowledge (Brink, 2007:2).

3.2.1 Research Design

For this study a qualitative approach was applied using a case study design. A case study is a systematic and in-depth investigation of a particular instance, in its context, in order to generate knowledge. The word 'case' may refer to circumstances or situations of a person, thing or action, varying in size or shape. The word 'study' entails applying your mind in order to acquire knowledge. To study a phenomenon from a variety of perspectives means

to examine it in detail in order to understand it thoroughly (Rule & John, 2011:4). A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context. An intrinsic case study focuses on the case because it is interesting in itself. In this instance, the case focused on a small group of critical care nurses within a specific setting. Case studies can be utilized for various purposes. They can generate an understanding of and insight into a particular instance by providing thick, rich description of the case. They can also portray, analyse and interpret the uniqueness of real individuals and surroundings, capturing the complexity and situatedness of behaviour (Rule & John, 2011:9). Case studies can complement surveys by adding depth and texture in both their versatile and flexible research approach (Holloway and Wheeler, 2010:250).

Therefore, a case study refers to the process of conducting an investigation that is studying the case. In this study a group of participants within an institution were studied, i.e. the group were the case. As a process, a case study also involves following numerous steps as outlined below. The first step required the case to be identified as comprising of a limited number of critical care nurses within an intensive care environment. Literature was read relating to the context and once the data was collected and analysed, the similarities and differences were highlighted. Data was collected via individual interviews and a single focus group interview. Emerging themes were analysed in detail and finally, the writing up phase was undertaken (Rule & John, 2011:5). In this study, the concept of critical thinking and the critical care nurse's related perspectives and experiences were explored using a case study design.

3.2.2 Population and Sampling

The population for this study comprised of registered professional nurses working in an intensive care environment of a private hospital. A purposive sampling technique was adopted and the sample participants were drawn from the identified population. These particular participants were included as they shed the most light on the case due to their experience as critical care nurses (Rule & John, 2011:64). The final sample comprised of six participants.

The researcher visited the institution to explain the aim of the study a week prior to scheduling of interviews, allowing the potential participants' time to decide on their willingness to participate and contribute towards the study.

Of the nine individuals who were approached to participate, only one declined. On the day of the interview two potential participants were not available leaving an adequate sample of six remaining participants. It is important for case study designs that the pool remains relatively small as this allows the researcher to analyse and understand similarities and differences within a specific setting (Rule & John, 2011:64). The sample displayed a range of differences while the combined years of experience contributed richly towards the study. The interviews were then set up for the following week after screening the duty roster. Representation of the sample was selected due to participants' relevant knowledge, interest and experience in relation to the case.

3.2.3 Inclusion Criteria

Registered professional nurses working in an intensive care unit of a private hospital; this included permanently employed and agency staff with more than one year professional experience in an intensive care environment.

3.2.4 Exclusion Criteria

Enrolled nurses, enrolled auxiliary nurses and care workers were excluded from this study.

3.2.5 Data Collection Tool

The data collection tool was guided by an interview guide (see appendix A). The guide was developed to ensure specific information was collected from the participants such as age group, gender, years of experience in an intensive care unit, employment status and postgraduate specialization. Further to this, the guide was used by the researcher to focus on the discussion and prompt the participants if needed. The development of these questions was guided by the reviewed literature, the problem statement, the aim and the objectives of the study.

The interview guide had two central questions and five secondary questions. These questions were asked in no particular order as detailed below:

Central questions:

1. What do you understand of the concept of critical thinking?
2. How do you think the application of critical thinking skill impacts on delivery of quality nursing care in clinical practice?

Secondary questions:

1. What are your thoughts on critical thinking in clinical practice?
2. Describe to me what you think facilitates the application of critical thinking skill in clinical practice.
3. Describe to me what you think limits the application of critical thinking skill in clinical practice.
4. How does critical thinking support the delivery of quality nursing care?
5. If Critical thinking is required to integrate theory into practice, do critical care nurses consistently apply critical thinking skill?

3.2.6 Data Collection

In this study, critical thinking was the main focus while concept understanding and influential mechanisms affecting the application of critical thinking was explored. A combined method of data collection was used.

A pretest was conducted, prior to data collection, where the interview guide was found to be usable in its original format and no changes were required. Individual interviews were conducted by the researcher self in order to capture the uniqueness and complexity of this case study. The individual interviews were then followed by a focus group interview, once again interviewing was done by the researcher, of the same participants to confirm and elaborate data from the individual interviews. The interview guide contained questions developed by the researcher which were posed to all the participants. As deemed necessary, additional prompting and elaborative questions were presented to the participants to elicit a full explanation of their experiences. The interviews were recorded on a tape recorder with a backup recorder to overcome any technical issues.

A field worker took notes during the interviews by observing and recording non-verbal communication which assisted in identifying specific themes. The field worker was available for all except one interview and was also present for the focus group interview. Permission was obtained from the participants to have the field worker present and to record the interviews. All recorded and transcribed data was verified by the field worker as the transcripts were read in their entirety to ensure the trustworthiness of the data collected.

Detailed individual interviews were conducted to explore the critical care nurses' perspectives and experiences of critical thinking in clinical practice. The first two

individual interviews were conducted in the morning, in the unit manager's office (with permission), thus providing privacy, minimising interruptions and environmental noise.

The next two interviews were done in the afternoon to limit impact on patient care. These interviews were done in a staff tea room outside of scheduled tea time thus also providing privacy, minimal interruptions and noise. The venues were found to be comfortable, safe and suitable for the intended purpose. Two days later, the remaining two individual interviews were conducted in the morning. The selected venue was the staff tea room outside of scheduled tea time. The venue was prepared and the participant was interviewed in privacy with no interruptions or noise to distract from the interview. The final interview was conducted under the same circumstances. Both participants had consented to being interviewed and the field worker was present for the duration of both interviews. All six interviews were conducted over a period of three days.

These same participants then engaged in a focus group interview. The purpose of this focus group interview was to confirm the perspectives expressed by the individual participants during the interview and to allow any additional data to emerge in the focus group interview format. After the second set of interviews the participants set a date for the following week. Of the six participants from the individual interview sessions, five of the participants were then able to form a focus group at a time and place convenient for all. The focus group was arranged, in a suitable setting with privacy ensured, so as to cause as little impact as possible on patient care. A safe and comfortable environment was created with minimal interruptions experienced. This was the same venue which was used for the second batch of individual interviews, namely the staff tea room outside of allocated tea times. The focus group revealed important concepts, including similarities and shared opinions which contributed towards the study. This data was thoroughly explored during the focus group to contribute to data saturation. Researcher bias was limited by careful selection of sample through adoption of purposive sampling technique.

3.2.7 Data Analysis

Qualitative research usually entails collecting and analysing data simultaneously or interchangeably. Qualitative content analysis was used to analyse text data and focused on the characteristics of the language used for communication with attention to the content or contextual meaning thereof. The aim was to provide knowledge and understanding regarding the phenomenon under study (Hsiu-Fang & Shannon, 2005:1277).

The following steps were used to analyse the interview data obtained (De Vos *et al*., 2005:334):

Step 1: Management or organising the data

The researcher organised the data into file folders, labelled appropriately for manageable retrieval together with complete field notes. The researcher listened repeatedly to the tape recordings to ensure that all the data was correctly captured. The tape recordings were transcribed verbatim, transforming them into written documents. The researcher transcribed two interview recordings herself; the remaining four interview recordings and the focus group were transcribed by a professional transcriber. The researcher verified these five transcripts personally by listening to the recorded data while reading the transcript (De Vos *et al*., 2005:336).

Step 2: Reading the data

Further data analysis continued with the researcher reading the transcripts repeatedly, word by word and line by line, to achieve immersion and to obtain a sense of whole. Initially the interviews were read in their entirety, to achieve immersion, before dividing them into smaller more manageable sections. Exact words were extracted by the researcher to capture key concepts or thoughts. These extractions were grouped together to allow immersion and to allow for exploration of themes emerging from the raw data. Next the researcher made notes of her own first impressions and thoughts through guided reflection (De Vos *et al*., 2005:337).

Step 3: Coding the data

As the process continued, codes began to emerge which then became the initial coding scheme. These codes were then applied to the themes based on their links and relationships. The researcher began to recognise emergent themes which were then organised into meaningful groups which were defined (De Vos *et al*., 2005: 338). The data was independently coded to verify and strengthen the analysis and interpretation, while simultaneously generating additional information. This was done to avoid researcher bias, halo effect or preconceived ideas. Knowledge generated from the analysis was based on participants' unique perspectives contained in the actual data and was interpreted objectively.

Step 4: Generating themes and sub-themes

This step entails identifying the themes and sub-themes through taking the text or qualitative information apart in search of categories. The raw data of each interview and the focus group was compared to each other noting the regularities, the internal consistencies and also the distinct or subtle differences which emerged. Interpretation included the researcher's insights and intuition (De Vos *et al*., 2005:337).

Step 5: Testing emergent understandings

Here the researcher determined the usefulness of the data by verifying whether the emergent data answered the questions and objectives asked within this study. This is an in-depth process of evaluation and understanding of the data. The researcher looked at the questions explored and how the story opened up revealing the case being studied. The researcher explored the data until it was thoroughly understood, constantly comparing similarities and differences which emerged (De Vos *et al*., 2005:338).

Step 6: Searching for alternative explanations

Alternative explanations always exist, according to De Vos *et al.* (2005:339). During this step, the researcher searched, identified and described alternative explanations, challenging the kaleidoscope of explanations that seemed so obvious. The researcher searches emergent data for possible explanations and links within (De Vos *et al*., 2005:339).

The final phase is a highly complex process whereby large amounts of raw data was processed and interpreted. The demographics are discussed in detail. The data analysis and interpretation was divided into three themes, each with three sub-themes attached. The different levels of abstraction were discussed in detail, shifting from a broad concept or idea to a narrow one creating an image of the information interpreted. The three themes were discussed in general. The nine sub-themes were then discussed in detail with direct quotes under each to indicate how assumptions and conclusions were elicited from the individual participants' responses. Direct quotes were placed within quotation marks and the same font was used in italics to distinguish them from the rest of the text (De Vos *et al*., 2005:339). Reviewed literature was added to support the research findings thereby adding value to the analysed data.

3.2.8 Trustworthiness

Trustworthiness is concerned with accuracy and truthfulness. Trustworthiness is an attempt to access the meaning and interpretation of an event with accurate reflection thereof (Brink, 2007:118). The researcher was able to do this by eliciting participants' positive and generous responses which appeared to be genuine and detailed.

Five of the six individual participants were interviewed together in a focus group by the researcher five days after completion of the individual interviews. The focus group was useful in gaining a sense of the range and diversity of views, which may otherwise have been lost. Here, individual ideas and thoughts were brought together and openly discussed with no single individual dominating the discussion. A field worker was present to detail non-verbal communication as well as verbal responses (Rule & John, 2011:107).

According to Rule and John (2011:107), the concept of trustworthiness encompasses values such a rigour, transparency and professional ethics. Trustworthiness in qualitative research is discussed in detail as follows:

3.2.8.1 Credibility

Credibility was supported by utilising a variety of sources including six individual interviews and a single focus group of five of the original six participants. The credibility and the strength of this study were ensured by accurately describing and interpreting the participants' perspectives and understanding of critical thinking. Authenticity is established by rich content and meaningful descriptions (Brink, 2007:119). Rich content was achieved due to the fact that the participants had extensive experience in an intensive care environment and thereby were able to relate well to the concepts being researched.

3.2.8.2 Transferability

Transferability refers to the degree to which the results of a study are applicable in another context or setting. The researcher provided a detailed description of the phenomenon so that others could determine whether the findings would be applicable in another context or setting and whether they would consider using a similar approach for their own setting (Brink, 2007:119). Furthermore, according to Rule and John (2011:108), a thick description creates the conditions for reader-determined transferability.

3.2.8.3 Dependability

Establishing dependability and truthfulness of the study requires an audit to be done where the processes and procedures used are examined to determine whether they are acceptable and dependable (Brink, 2007:119). To ensure dependability of this study, data obtained from the interviews and focus group was captured on two tape recorders. The researcher took notes while conducting the interviews using an interview guide. All recorded and transcribed data was verified by the field worker. The case study design was described to the participants encouraging full participation. An independent coder was used to verify and strengthen the analysis and interpretation of the data collected.

3.2.8.4 Confirmability

Confirmability ensures that the findings, conclusions and recommendations are supported by the actual evidence and the researcher's interpretation thereof (Brink, 2007:119). According to Rule and John (2011:107), full disclosure of the research process, including limitations, the researcher's position and ethical requirements help to establish the confirmability of a case study. In this study, recorded and transcribed data was discussed in detail and verified by the field worker after each interview and focus group; to exclude researcher bias, this was done timeously. The data was stored after analysis in a safe, secure location at the researcher's place of permanent residence, for future retrieval.

3.3 PRETEST INSTRUMENT

A pretest instrument is a small scale study or trial run of an actual research project (Brink, 2007:206). The main aim is to investigate the feasibility of the proposed study and the measurability of the data collection instrument (Brink, 2007:166). A pretest instrument consisting of an interview with two critical care nurses was conducted under the same conditions that the main study would be done. This enabled the researcher to recognise and address any shortfalls before the actual data collection commenced. The relevance, clarity, grouping and effectiveness of the question and interview guide were also established and therefore it was able to be used in its original format. The guide was not ambiguous and appeared to elicit relevant information in that the pretest participants felt that there was no additional component required. The results of the pretest were not included in the actual study.

3.4 ETHICAL CONSIDERATIONS

The researcher is responsible for conducting research in an ethical manner and failure to do so may have negative consequences. There are three fundamental ethical principles that are set out to guide researchers; these are based on the human rights that need to be protected in research. These rights include the right to self-determination, the right to privacy, the right to anonymity and confidentiality, the right to fair treatment and the right to protection from discomfort and harm (Brink, 2007:31).

3.4.1 Quality of the Research

The researcher adhered to standards of evaluation, planning and implementation of the project. Honesty and good faith was adhered to, ensuring trustworthiness. The research was conducted meaningfully with a contribution to the improvement of nursing practice. Permission was given from the Health Research Ethics Committee at the Faculty of Health Science, Stellenbosch University. The researcher has successfully completed Research Methods and Contemporary Health Nursing Practice modules at Stellenbosch University. Full supervision was available throughout the research process.

3.4.2 Consent

In this study, written informed consent was obtained before each individual interview and focus group interview as well as consent to record the individual interviews and focus group interview. A field worker was present during five of the six individual interviews and the focus group interview with the participants' consent. Prior to commencement of data collection a detailed explanation of the study was given and participants were assured of their right to self-determination meaning that they could withdraw at any stage without repercussion (Brink, 2007:35). The potential participants chosen were briefed a few days before the interviews were set up allowing them time to consider the implications thereof. Of the purposive sample of nine approached, only one declined to be interviewed with a further two unavailable on the day of interviewing. The remaining sample showed enthusiasm and a willingness to participate despite a tight work schedule and busy work environment.

Permission and consent was obtained from the hospital group to which the hospital belongs. The identity of the private hospital used for the study has been removed for purposes of confidentiality. The original document is available on request from the

researcher. The managers of the intensive care units were also in agreement and offered the necessary support such as a safe, comfortable venue and availability of staff.

3.4.3 Confidentiality, Anonymity and Privacy

Every effort was made to ensure confidentiality, anonymity and privacy in this study; however, this cannot be guaranteed.

Confidentiality: It is the researcher's responsibility to prevent data collected during the study from being made available to other persons (Brink, 2007:35). The data obtained in the form of recorded interviews will be kept locked in a safe and secure place at the researcher's permanent place of residence for at least five years and then destroyed.

Anonymity: literally meaning 'namelessness'. In this study only the researcher was able to identify participants with the tapes. Participants were given numbers to disguise their identity. In focus group interviews absolute anonymity is not always possible but the researcher processed the data anonymously (Brink, 2007:34).

Privacy: The researcher must respect the participant's right to privacy as the participant has the right to determine which private information will be shared or withheld from others. The participant's right to privacy was maintained throughout this study by avoiding covert data collection which entails the use of closed-ended questions.

3.5 CONCLUSION

Initially the research questions, aim and objectives were highlighted. For this research a qualitative approach was applied using a case study with content analysis. The researcher deliberately chose the participants using a purposive sampling technique. An interview guide was used as a data collection tool during the data collection process. Data analysis was achieved by coding emergent themes which were organised into meaningful groups and discussed in detail. Trustworthiness was pursued through accuracy and truthfulness. A pretest was done to investigate the feasibility of the study. Ethical considerations included quality of the research, informed consent, confidentiality, anonymity and privacy. In this study the concept of critical thinking and the critical care nurse's related perspectives and experiences were explored.

CHAPTER 4: DATA ANALYSIS

4.1 INTRODUCTION

Chapter four presents the data analysis of the study. The study was guided by a qualitative approach and was descriptive in design. Accordingly, the analysis focused on the concept of critical thinking and the critical care nurses' related perspectives and experiences thereof. The objectives were designed to cover critical thinking in an intensive care environment. Factors which influenced the application of critical thinking skill in clinical critical care nursing were identified and discussed in detail. The effect of critical thinking on the quality of nursing care was also elaborated upon.

4.2 DEMOGRAPHIC DATA OF PARTICIPANTS

The inclusion criteria defined the participants as registered professional nurses working in an intensive care unit of a private hospital; this included permanently employed and agency staff with more than one year professional experience in an intensive care environment. A purposive sampling technique was adopted. The researcher deliberately chose participants who appeared to be most suitable in advancing the purpose of the study. The sample chosen displayed a range of differences which contributed towards the richness of the study.

With respect to gender, one participant was male while the other five participants were female. Two of the participants had less than ten years of working experience; similarly, two participants had between 11 and 15 years of working experience; while the remaining two had more than 16 years of working experience, all in intensive care units. With all these years of experience between the participants it is evident that the age group was of a more senior nature. All the nurses had chosen to work in an intensive care environment, demonstrating good collegial relationships.

Two of the participants were between the ages of 30 - 40 years while the remaining four participants were all between the ages of 41 - 50 years. Of the six participants, four were permanent staff members employed in an intensive care unit with the other two participants working through a nursing agency. It was not immediately identifiable who were agency staff and who were permanent staff as there appeared to be a good rapport amongst the nurses with no obvious exclusion noted.

Four of the six participants had post-graduate intensive care nursing qualifications showing that as a group the majority of the participants had specialist knowledge and skill as intensive care trained professionals. All the participants were enthusiastic in sharing their experiences, not only in the individual interviews but even more so in the focus group. The participants were willing to share their demographic data freely, allowing them to review their own progress through their nursing careers. There was no single participant who dominated the focus group and group cohesion was evident with mutual respect for each other shown. The atmosphere amongst the colleagues was at all times friendly, warm and humorous.

4.3 THEMES AND SUB-THEMES

Data analysis of the interviews was done using content analysis as described by De Vos *et al*. (2005:334). Themes and sub-themes were identified from the transcribed interviews based on categories that emerged from the data. The raw data of each interview and the focus group were compared to each other noting the patterns, regularities, consistencies and also the differences which emerged.

An initial coding scheme developed from the patterns in the data. Emergent themes were then used to organise, cluster and define codes into meaningful groups. Here the researcher determined the usefulness and relevance of the data by verifying whether the data answered the questions and objectives posed within this study. This was an in-depth process of evaluation and gaining understanding of the data. The researcher explored the data until it was thoroughly understood, constantly comparing the patterns, similarities and differences discovered.

4.4 THE CONCEPT OF CRITICAL THINKING

Figure 4.1 depicts the subthemes which emerged related to the thematic concept of critical thinking.

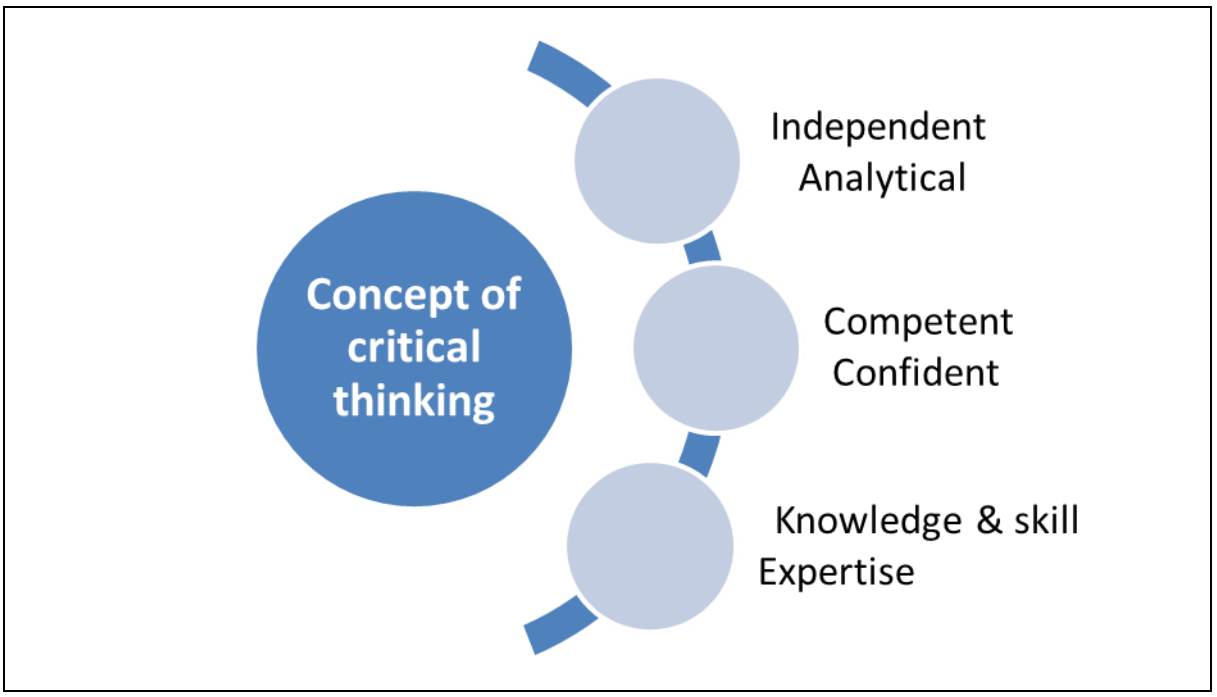

Figure 4.1: Concept of Critical Thinking

Critical thinking is the ability to think in an organised and efficient manner, with openness to question and to be able to reflect on the reasoning process (Heaslip, 2008:834). The data collected revealed how the participants personally understood the concept of critical thinking. They spoke enthusiastically about using critical thinking skills in their workplace. A range of individual traits were mentioned as common amongst critical care nurses. These included having analytical reasoning and listening abilities, being able to think independently and being able to practice with confidence and competence. They also expressed their views on the responsibility of the nurse to have the appropriate knowledge, skill and expertise when making important decisions and solving complex problems. The concept of critical thinking appeared to be well understood as most participants felt that they were using these skills on a daily basis; see figure 4.4. The concept was further explored by three sub-themes which emerged most predominantly, namely:

4.4.1 Independent and Analytical Thinking

The participants revealed that analytical reasoning and listening was one of the most important characteristics of a critical thinker. One participant emphasized that listening needed to be reciprocal, in other words, one must be able to listen and the other person needs to listen to you as well. *"I think one of the most important things is listening. But also when you listen you must be able to, the other person to listen to you as well. So I think it is also a reciprocal thing" (Participant 1, page 1).*

The following seems to suggest that some nurses' feel they can benefit from observation of how to actually think critically and that an active role model is a positive influence on their ability to function optimally. "*It is amazing what you can learn from other people you know just by listening and observing as well" (Focus group, participant 4, page 8).* Another participant felt that critical thinking is applied by analysing things, by a nurse making up his/her own mind and by composing a synthesis from what he/she sees. This is supported by a specialist nurse being able to show a relative level of independence in being able to make her own decisions as described by a participant. "Y*ou have to think in an analytical way as well and you sort of have to compose a synthesis from what you see and then based on that you make your decision" (Participant 4, page 1).*

The idea of thinking in an independent fashion was described in a manner that associated it with analytical reasoning. The following participant described independent thinking as being allowed to make important decisions and as sometimes needing to be able to think outside the box in order to ensure that important decisions that need to be made will improve on the quality of nursing care. The participant elaborated to explain that by applying critical thinking a nurse actually assists in developing a colleague's problem solving skills as well their ability to think for themselves. "*Because critical thinking actually allows you to make important decisions given time. And I will definitely say that will definitely improve on the quality of nursing care in the long run as well because by applying critical thinking you actually develop somebody's problem solving skills as well, to think for themselves" (Participant 3, page 2).*

The same participant thought that nurses should be independent by doing research and self-study. *"Then of course I think you have to sort of be independent as well and do a bit of research on your own as well, consult with literature and do a bit of searching on Google" (Participant 3, page 4).*

Similarly, one participant expressed a comparable view where she believed that *"you actually broaden your horizon, you come more out of the box, you think more out of the box, as you climb the ladder you can do more" (Participant 2, page 4).* This was reiterated by the view that it is a necessary aspect in order to work in an intensive care environment that the nurses should be capable of thinking for themselves and should continuously work on improving that skill. She highlighted the important fact that *"if you lack a bit in that field it is just a matter of working at it and improving that skill" (Participant 5, page 2).*

This view did not differ in any material way from what the focus group described. One participant was able to summarise this succinctly by saying that *"Problem solving skills, you know if you can do that independently, that is the manifestation of your ability to think critically" (Focus group, participant 4, page 1).* Analytical reasoning and independent thinking should be an inherent requirement for a critical care nurse to be deemed competent and these skills will support confidence in her role in an intensive care environment.

4.4.2 Competence and Confidence

The capacity and ability of a nurse in an intensive care environment is important beyond the dexterity required to complete technical procedures as part of the nursing care being rendered. Competence is another sub-theme which emerged. One participant mentioned that being competent as well as having knowledge enables nurses to think critically. "*Well, if you competent in what you do and the knowledge and stuff you have then I think you will be able to think critically" (Participant 6, page 9).*

Another participant felt that as a critical care nurse one is never competent enough and that one always needs support. Competency was cited as being one of many characteristics when discussing the concept of critical thinking. *"But sometimes there is that fear that you have if you feel that you are never competent enough in an ICU" (Focus group, participant 3, page 6).* This links to the impact that confidence has on the critical care nurse's ability to display competence.

Several participants also stated confidence as being very important; one of which expressed that *"There are many things, competency. I learnt that you will look at that, in the scope of practice*" (Participant 1, page 3) and that "*I am coming to that, yes confidence is also very important, confidence will play part in how far you can go*" (Participant 1, pages 6).

One participant felt that if a nurse is confident he/she will benefit and be able to learn from previous experiences and expressed it as *"Then if you're confident then you'll be more relaxed and you will want to find out more about the situation, so that you know when you get into that situation again, that you know what to do" (Participant 3, page 4).* An intensive care environment demands a certain level of individual accountability which is positively contributed to by being able to show confidence (that comes with competence) from a position of authority. The participant that best described this sentiment described it clearly by saying "*I think it's important as well, you must be confident enough, sort of almost take ownership of the situation, make it your own" (Participant 3, page 4).*

On the other hand, over-confidence was also cited by one participant as being potentially problematic as this might lead to making decisions that are not within a nurse's scope to make. *"That comes in with over-confidence and if you think, also if you overstep the line of, overstep the professional boundary" (Participant 5, page 8).* Of interest is the fact that a topic emerged amounting to the fact that some staff did not want to take the responsibility for making a decision as they felt the burden of the responsibility to be too heavy due to a lack of confidence as well as to a lack of competence. The workload was cited as a contributing reason for this. "*You know sometimes people don't want to think critically because of work load and because the person doesn't perhaps have enough confidence in their own ability and that is something that can be a very individual thing as well" (Focus group, participant 4, page 5).*

Confidence and competence are major factors that contribute to the ability of a critical care nurse to use critical thinking as a means of ensuring good quality nursing care in an intensive care environment. This is underpinned by the specialised knowledge and skill the nurse must have in order to work in such a setting.

4.4.3 Knowledge, Skill and Expertise

In nursing the psycho-motor competence required to remain up to date is an accepted norm; this is especially true in an intensive care environment. It is important to maintain a high quality of patient care. One participant strengthened this notion by also including, "*We need to be knowledgeable, have that integrity and sometimes with experience" (Participant 1, page 4).* Critical care nurses must be able to, most appropriately, provide the required level of care for the patient. This aligns with the impact of being able to apply critical thinking in the unit. In another instance, a participant felt that patients deserved to benefit

from her abilities and competence which was gained not only from theoretical study, but also from colleagues. *"They are here to get better and they're here to get part of my skills" (Participant 2, page 3). "You pick up things just like that! And that is one of the skills she actually taught me and yes it does facilitate in another way" (Participant 2, page 6).*

In general, the participants believed they have a significant responsibility to their patients and also that an integral part of knowledge and skill was to know when to report to a senior staff member or when to contact the doctor. "*Yes book knowledge, you must have book knowledge, yes, everything starts with a book and you put it into practice" (Participant 2, page 8). "I will just consult with the doctor, phone the doctor and ask him what should happen next in terms of the patients' treatment" (Participant 3, page 3).* The same participant felt that theoretical knowledge was the corner stone of critical thinking. *"Knowledge is so powerful and will make such a powerful tool and if you are knowledgeable then there is so much that you can actually do with that but I think that is built basically on the corner stone of critical thinking" (Participant 3, page 8).*

Several participants gave an account of how knowledge and experience improved decision making in a specific situation by them using relevant information and stated that decision making required critical thinking skill. "*I would say it is using knowledge and your experience in a situation and using that information to be able to make a decision" (Participant 5, Page 1).* They also showed clear insight into the fact that being able to apply critical thinking in an appropriate manner you required knowledge and experience. *"A lack of experience and knowledge will be a limitation" (Participant 5, page).*

In addition to the points raised previously, it emerged that being skill full was in itself a positive motivator and allowed critical thinking to take place. One participant had a different experience with regards to knowledge and skill and expressed that sometimes book knowledge and application to practice did not always work out, stating that you cannot do everything that the book says. This was an isolated opinion but never-the-less did hold some truth. A lack of knowledge and skill was also mentioned as a limitation concerning the ability to use critical thinking skill. *"Sometimes the book knowledge and the practical thing just does not work out" (Participant 6, page 9).*

Analytical and independent thinking; competence and confidence; as well as knowledge, skill and expertise are all components of the concept of critical thinking that may positively

or negatively influence the quality of patient care required in an intensive care environment. The aspects that facilitate critical thinking evolved from the clustering of people-orientated aspects such as support and teamwork; the experience of the nurse and the exposure within the unit; as well as the important dimensions of teaching and training. These aspects are described below.

4.5 FACILITATION OF CRITICAL THINKING

Figure 4.2 depicts the subthemes which emerged related to the thematic facilitation of critical thinking.

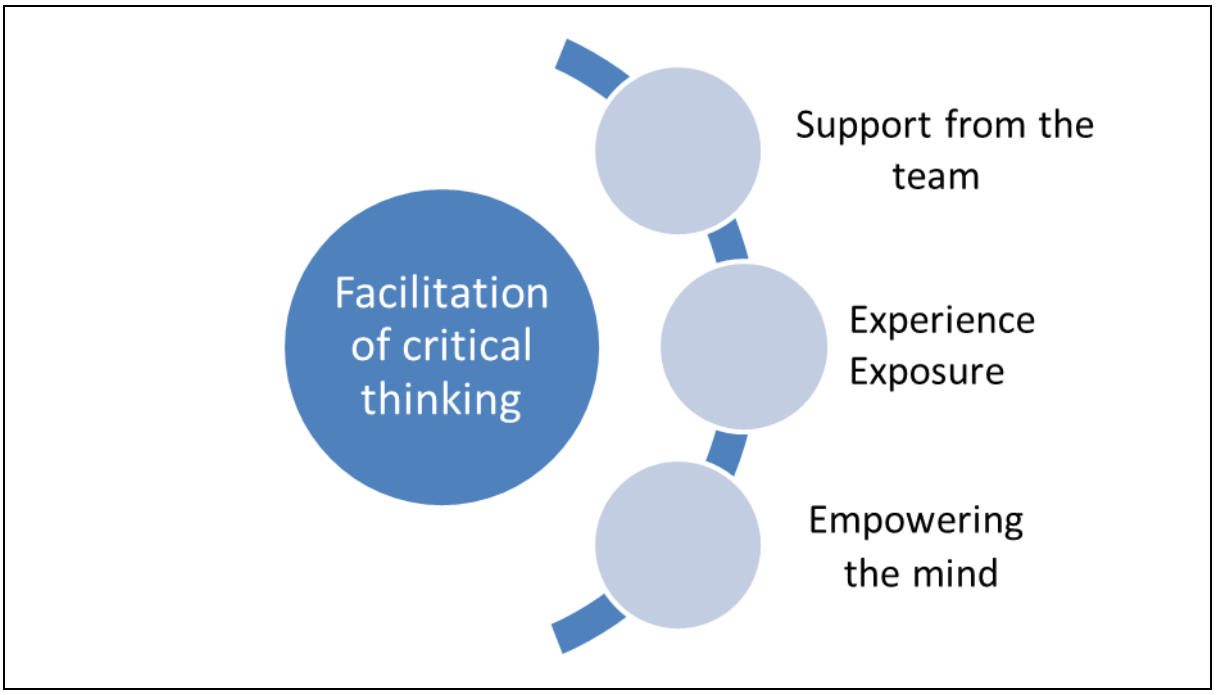

Figure 4.2: Facilitation of Critical Thinking

A theme that developed from the rich data gathered was around the factors that would enable and assist nursing staff in an intensive care environment to be able to effectively apply critical thinking in their daily nursing activities.

The data collected indicated how the participants personally perceived the factors which facilitated critical thinking. In general participants shared their experience by giving concrete examples of what actually occurred in an intensive care environment. It was evident that the participants viewed the facilitation of critical thinking in a most positive light. Most of the participants had a similar experience of what facilitation of critical

thinking entailed. The facilitation of critical thinking was further explored by dividing it into three sub-themes which emerged from the data. Participants noted that support from colleagues was a major contributing factor in the facilitation of critical thinking. Another participant identified that a multidisciplinary team approach was most useful.

Several participants mentioned that the importance of previous experience in an intensive care environment as well as the empowerment of critical care nurses as being essential. Participants also gave an account of how teaching and training had influenced their ability to think more critically. Some participants also expressed their feelings towards the role research and self-study played. Rarely did participants share a negative perspective towards critical thinking skill in an intensive care environment; see figure 4.4.

Based on the study findings, the researcher concluded that the facilitation of critical thinking in a specialised intensive care environment was well supported and contributed significantly towards the improved quality of nursing care.

4.5.1 Support from the Team

All the participants responded wholeheartedly when support and team work was discussed. Participants gave scenarios of how this facilitated their nursing care and enabled them to improve on the quality of care practised. The participants reflected a need to communicate with their colleagues and to form good collegial relationships with them. A good rapport with the doctors was also mentioned frequently as well as the importance thereof. One participant felt the way you interacted with colleagues was also important. "Y*our relationship is always very important with your colleagues. How you interact. I think basically all our doctors are approachable because of the way of approaching them. They will always be very flexible"(Participant 1, page 7).*

According to responses, it appeared that the majority of the participants felt that the support from the doctors, and not only from nursing colleagues, was most positive, citing them as being available and flexible. Several participants referred to their own personal experiences when they spoke about support. One participant identified moral support as offering some relief to nursing staff. *"I must say there is always, you can phone them at any time and so from that side there is usually a very good back up. You know that especially 'moral support' so that makes it a bit easier as well" (Participant 3, pages 3 & 5).*

The aspect of collaboration and being prepared to speak to the team in order to make decisions is a mechanism that reduces the perceived stress of nurses who may lack the confidence to make decisions on their own. The "safety" gained from the team allows for fewer errors to occur; this is very a very important aspect of gaining and giving support to one another on an on-going basis. *"I don't think they always use critical thinking. But if you put heads together, then, then you can do your thing" (Participant 4, page 7).* This cannot happen without support from and a level of trust between the team members.

A team member specifically identified as being a critical role player, is the clinical facilitator. Support from the clinical facilitators in an intensive care environment was described in the following: "*...then the clinical facilitator walks in, she comes in with a new pair of eyes and she suddenly picks up on something" (Participant 5, page 7).* This was seen to be providing a positive contribution towards decisions that had to be made and the participant felt supported by this action. One participant mentioned that the "*multidisciplinary team in this department works well together" and " ... and she will give proper feedback to both nursing staff and the doctor" (Participant 5, page 7).*

Professional nurses in an intensive care environment who are both competent and confident and who have shown their ability to make sound clinical decisions over time, contribute to the trust and peace of mind that certain doctors experience when they feel assured that the patient will receive the necessary and appropriate care they require. *"They don't, some of them don't mind if you think because I mean it is less worry for them if they know there is somebody that knows what they are doing" (Participant 6, page 2).*

The same participant agreed that having good collegial relationships also helped, at the same time believing that sharing experiences and bringing heads together provided much needed support. *"Having a good relationship with your colleagues also helps. Yes, if you have a lot of heads and it comes from different backgrounds, it can yes, if they are willing to share their experiences and their knowledge" (Participant 6, pages 3 & 6).*

Support between all staff members of the multidisciplinary team and a mutual trusting relationship facilitates the ability of and the opportunities for professional nurses in an intensive care environment to make sound decisions using critical thinking skills. The role of learning from experience and being exposed to different situations further facilitates the professional nurse's ability to apply critical thinking in the workplace.

4.5.2 Experience and Exposure

Participants gave numerous reasons as to why previous experience and exposure had facilitated their critical thinking skill in an intensive care environment. The majority of the participants choose to work in an intensive care environment and most of their experience was gained there. Generally, participants spoke frequently about how they relied on their previous experience to deal with decision making and problem solving, citing multiple examples of how experience had facilitated critical thinking skill. In more than one instance several participants considered experience more useful than book knowledge, especially in an emergency situation. This is not fully supported as using experiences from clinical practice should greatly improve the integration between theory and practice. One critical care nurse felt that exposure to new situations, through selective staff allocation, not only broadened her horizons, but also empowered her to use her critical thinking skill. Several participants gave classic examples of how beneficial empowerment of colleagues proved to be and how it improved the standard of specialized nursing care.

Participants detailed different perspectives and one participant felt that nurses also offered guidance to the doctors through sharing their own experiences with them. *"I'm sure she got her experience from there and being able to because they guide the doctors all the way you know" (Participant 2, page 4).* The same participant showed confidence in her knowledge gained from her practical experiences. "*So I would say yes, theory, but most of the time it's practical, experience and practical experience teaches you" (Participant 2, page 8).*

Stress can have a positive or negative outcome for a person. Participant three cited exposure to stress as a factor which influenced the individual responses to critical thinking, more specifically, stating that "*You get people here that can be exposed to a hell of a lot of stress but they still maintain their critical thinking as well, so it just depends on the individual" (Participant 3, page 10).*

Throughout the duration of the interviews, participants would regularly give detailed examples of how their own personal experiences as critical care nurses facilitated the quality of nursing care. A significant key problem mentioned by one participant was how a bad experience could have a negative impact on the delivery of quality nursing care by causing the nurse to feel afraid of using her critical thinking skills. *"Well if you have had a*

bad experience, I don't think, you would be afraid to use your brain" (Participant 6, page 5).

One participant believed that previous experience could have a positive or negative effect, the negative effect being that decisions could be made outside the nurse's scope of practice. *"It can be positive and it can be negative. Positive, yes the trained critical care nurse that knows his stuff and has years of experience, but it can be negative... ...because they think they know they can make decisions for themselves but actually it is way out of their scope of practice" (Participant 5, page 4).*

Qualified staff that are experienced and competent, who display confidence in their practice and who are in positions of being responsible for a team are sometimes mistakenly labelled as working outside of their scope of practice. Depending on the type and quality of previous exposure to a variety of situations, the competence of the practitioner may simply be at a level significantly higher than those of the team and may not result in her making decisions outside of her scope of practice.

Empowerment was cited as being a major contributing factor towards facilitation of critical thinking. One participant reported that to share and talk about what good work a colleague had performed empowered the nurse to do more the following day. The same participant also empowered her colleagues in the presence of her patients by encouraging them to perform tasks without being intimidated. She went on to say that to create a teaching opportunity out of a problem facilitated and empowered the staff and created a better intensive care unit. *"You know what, I think it was really great,' you show your friends, your senior colleagues and you talk about it. Come around here and talk about what she's done and she feels so empowered and you'll see tomorrow she'll do something else", "this is actually the nurse that does this for me and that for me and I will leave her here with you and you will see that she can do all these things, she can" and "You know she will make use of that problem that was there and make it a whole teaching for you" (Participant 2, pages 2, 3 & 6).*

Interestingly, one participant believed in self-empowerment by "consulting with literature and do a bit of searching on Google Scholar or whatever suits your fancy and just empower yourself" (Participant 3, page 4). Empowerment was also encouraged by allowing colleagues to answer their own questions, guiding them by asking leading questions and by

going back to basics. A shift in staff attitude from negative to positive was described by a participant as the result of empowering a colleague. "...just to take them back to the basics and ask leading questions and help them get to the answer themselves", "you could just see a whole shift in attitude, from this negative attitude the morning to this positive bubbly person the afternoon" (Participant 5, pages 2 & 9).

Another participant mentioned two incidents where senior personnel encouraged staff to think critically and communicate with each other, allowing for personal growth. The same participant felt that involving staff encouraged them to think for themselves. "...just to encourage the people to think more on the floor, so communication helps a lot" , "Encourages, I think if your unit manager is a positive person and she allows you to think, allows you to grow, that encourages it" and "yes it makes them think, if you send them, if you involve them" (Participant 6, pages 2,3 & 10).

The researcher concluded that both previous experience and empowerment of staff facilitated critical thinking and contributed significantly towards the quality of nursing care in a specialised environment. The role of exposure to various situations as well as the positive and negative experiences that staff have whilst working in an intensive care environment have an impact on their critical thinking abilities. The role of the clinical facilitator is seen positively which leads to the next sub-theme of training and teaching.

4.5.3 Empowering the Mind

Participants endeavoured to share their experiences of how in-service training and teaching amplified their critical thinking skill. In-service training and on-the-spot teaching by dedicated clinical facilitators was frequently mentioned and contributed towards the level of nursing care delivered. Many participants felt that having a facilitator on the floor enabled them to improve their clinical skills, and by implication their competence and confidence. Research was believed to be pertinent to teaching and training, in other words, it also contributed to the facilitation of critical thinking in a specialised environment.

One participant went on to say how a clinical problem was converted into a teaching opportunity. The same participant appreciated having a visible clinical facilitator doing rounds to ensure quality nursing care and encouraging colleagues to think for themselves. "*You know she will make use of that problem that was there and make it a whole teaching for you.*" and "*...going to come around and she's going to ask you why you've done this*

and that, that way and that is how one should be as a critical nurse" (Participant 2, page 6).

Participants had different perspectives regarding teaching and training but it was encouraging to hear one participant mention that when doing their training they were taught to think in a critical manner. In another instance, the same participant offered a solution in that she felt there would be value in teaching people how to apply critical thinking. Another participant expressed a similar view, saying, *"Well I think it will be good if they can perhaps even offer a workshop in critical thinking because many people are scared to develop lateral thinking" and " I am talking from my own perspective now and the training I did, but we were taught to think in a very critical manner" (*Participant *3, page 3).*

Some participants felt a need to do research and self-study to facilitate critical thinking. This is necessary in order to ensure that staff are aware of current best practices as well as changing practices that should be implemented. One participant was prepared to accept personal responsibility for her role and to take ownership for her continuous professional development, but she also indicated that some training from the workplace was also necessary. The participant felt it would be important to be *"...reading and absorbing literature yourself you know I think especially if you are not too sure about a patient's condition or you know try and make it your own" and "Yes she is always available for in-service training which really makes a big, big difference especially if there are certain concepts that you are not too familiar with" (Participant 3, page 4).*

This sentiment was echoed by participant five who also felt that doing research and keeping up to date with the latest trends in the work environment enhanced critical thinking. The participant also stated that in-service training was very important and that it assists with maintaining the standard of nursing care delivered. "*Reading, doing research, keeping up to date with the latest trends and in the work environment itself" and "In-service training is very important because that helps in keeping, maintaining the standards" (Participant 5, pages 2 & 6).* Another participant felt that empowering the mind entailed in-service training, educating oneself and one's staff, and creating a willingness to learn more. *"If there is in-service training you are educating yourself, you are educating the staff and you are empowering your mind, so then because you know more, you are willing to find out more so that makes you think" (Participant 6, page 4).*

Based on the study findings, the researcher concluded that teaching and training are imperative through both empirical and didactic means and that not all staff felt confident that they know how to apply critical thinking, thus the request for training of technical competencies as well as those of critical thinking techniques. This identified gap contributes to the factors that limit critical thinking.

4.6 LIMITATION OF CRITICAL THINKING

Figure 4.3 depicts the sub-themes which emerged relating to the thematic limitation of critical thinking.

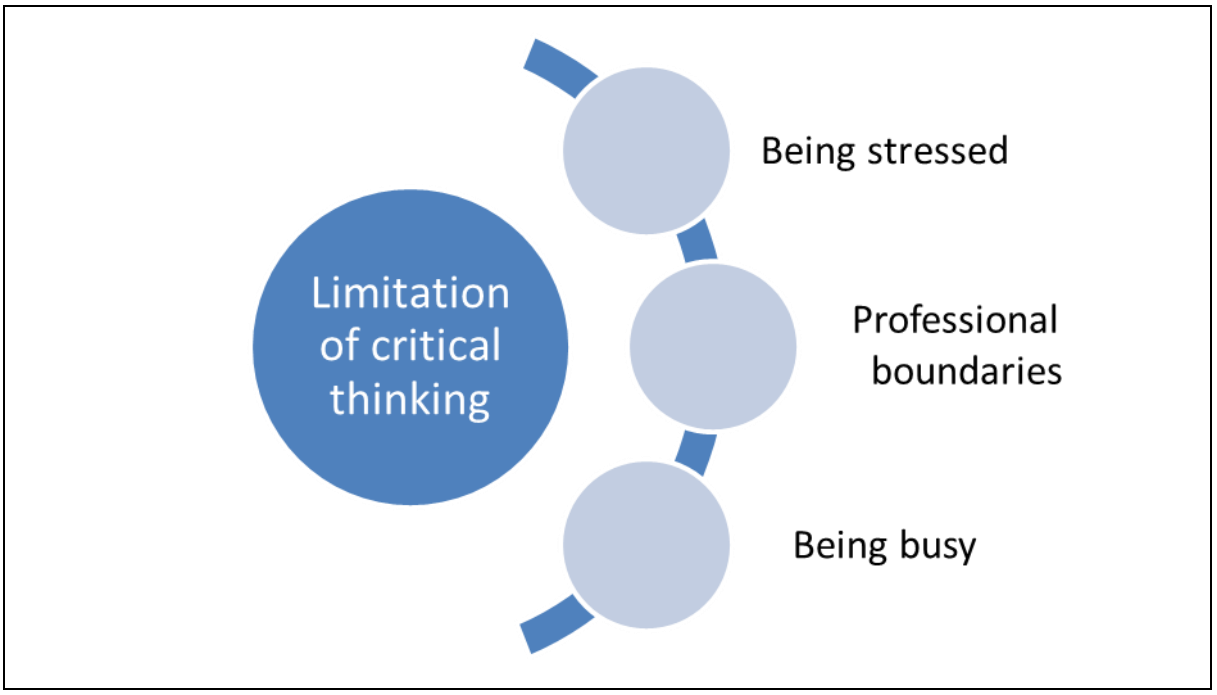

Figure 4.3: Limitation of Critical Thinking

The data collected indicated how participants had personally experienced barriers of critical thinking. Participants gave several accounts of the limitations which they encountered in everyday situations that disabled their critical thinking skills in some way. During the course of the interviews, participants frequently mentioned emotions as significant contributing factors, these included anxiety, stress, fear and feeling intimidated. These emotional factors were not only recognised and understood by several participants but also experienced personally at different levels of intensity and were found to be detrimental at times. Other environmental factors such as noise, overcrowding and lack of privacy were

believed to be contributory to stress and anxiety. Scope of practice and professional boundaries were also identified by participants as being potential barriers of critical thinking. There were times when participants found their scope of practice challenging and gave scenarios where it intervened with the critical thinking skill. Occasionally, concerned participants explained that workload and dependent staff created barriers of critical thinking which needed to be dealt with on a regular basis; see figure 4.4. These limitations are discussed further in detail.

4.6.1. Being Stressed

It was evident that the participants viewed anxiety, stress, intimidation and especially fear as irrevocable limits to using critical thinking skills. Over the course of each interview impressions were given by all the participants that they were exposed to a certain amount of stress. Participants explained how stress comes with the environment, especially in an emergency situation. According to responses, it appeared that environmental factors such as raised noise levels amplified anxiety levels. Two participants identified how a noisy environment increases anxiety levels. *"...whereas it is actually the environment that people think now nurses are noisy" (Participant 1, page 3).* One participant felt that the nurses were sometimes blamed for the noise level whereas it was often as a result of overcrowding and a lack of privacy. *"If it is too busy, it is too crowded, it is too noisy, those are all factors that are breaking your concentration" (Participant 5, page 5).*

One participant expressed how these environmental factors impaired a nurse's concentration and negatively impacted on his/her critical thinking skill. Another participant showed confidence when discussing environmental factors and felt that she was in fact more focused when the unit was busy, although she went on to say that too many visitors increased anxiety levels, having a negative effect on her. *"If the unit is full and I am busy then I'm for some or other reason I am just more focused, but sometimes you can be edgy so that can be very negative" (Participant 6, pages 7 & 8).*

Participant three explained how stress can also influence a nurse's decision-making ability, stating that it is not always easy to make decisions immediately. The participant then went on to say that team work often helped in this kind of situation. Stress was again mentioned when having to deal with visitors as sometimes nurses are scared to say too much. The same participant felt that stress was handled differently by each individual, leaving some of them incapable of thinking critically. *"Sometimes when you are very stressed as well you*

know it's not always easy to make that decision right there" , "I think people are scared sometimes to say too much", " Well it depends on the individual as well. You know some people are so stressed at that particular moment that they can't think straight you know" (Participant 3, pages 2, 8 and 10).

One participant felt that the delicate nature of the balance that needs to be maintained in an intensive care environment due to critical care nurses having patients' lives hanging in the balance, especially in an emergency situation, can leave them feeling scared and unsure of what decision to make next. The same participant also mentioned that staff were often afraid as there are hospital rules that restrict staff. *"...because you have got people's lives that's in the balance, that's hanging, it could be stressed especially in an emergency", "And there's so much rules in the hospital that also restricts staff" (Participant 6, page 4).*

Frequently mentioned by participants was the fact that nurses are scared to think and come to their own conclusions. In particular, one participant modestly admitted to feeling scared to think critically; whether due to lack of knowledge or previous bad experience, the participant was not sure. *"They are you know a bit scared to think and to come to conclusions" (Participant 3, page 3).*

Feeling intimidated was revealed often by several participants. One participant mentioned the possibility of being sued as being intimidating. *"...it is a problem, because people sue" (Participant 2, page 3).* The same participant explained how sometimes nurses get thrown into the deep end, unsure of how to deal with the situation, and how petrifying this is. Another participant reflected how a lack of collegial support undermines a nurse, leaving her feeling intimidated. *"There are some that who wants to undermine you." (Participant 4, page 6).*

Fear of using critical thinking skill was evident from several participants while some felt that feeling intimidated prevented them from thinking critically. Yet another participant noted that it could even be dangerous to think outside the box and also that as people feel threatened, they congruently feel afraid to think critically. *"Sometimes it is dangerous to think out of the box, so I think it is also, you are also scared to use your brain" (Participant 6, page 2).*

Based on study findings, the researcher concluded that emotional factors such as anxiety, stress, feeling intimidated and fear were pertinent to limiting critical thinking skill and were

compounded by environmental factors such as a noise and overcrowding which exacerbated their stress and thus their inability to think critically. The role of professional boundaries and scope of practice yielded both positive and negative findings that reinforce the necessity for certainty in order to reduce stress and fear of intimidation and exposure.

4.6.2 Professional Boundaries

In general, participants validated their responses by mentioning how scope of practice and professional boundaries limited the use of their critical thinking skill. Although scope of practice may be seen as a limitation, in the case of an emergency, registered professional nurses are allowed to practice beyond their scope therefore not all participants viewed scope of practice in a negative light. It was also mentioned that, due to the fact that there are several categories of staff working in an intensive care environment, scope of practice ensured staff members did not practice beyond their scope ensuring safe, quality nursing care. Rarely did participants see scope of practice as problematic but rather as limiting in some instances. Participants believed that professional boundaries, although limiting, are also at times necessary.

One participant referred to critical thinking as being allowed to think outside the box but not outside your scope. *"Well I think critical thinking is, are you allowed to think out of your scope, not out of your scope but out of your RN box" (Participant 6, page 1).* Another participant felt that your scope of practice ensured that you adhered to the law, while another participant felt that scope of practice is limiting and can have a negative effect on us. *"Definitely I have to adhere to the law side, have to function in my scope of practice" (Participant 3, page 2). "More the lower category who are working in the critical care environment, they get allocated tasks to do that are actually outside their scope of practice" and "Look your scope of practice limits you already, can have a negative effect on us" (Participant 5, page 4 & 6).*

One participant gave her view on professional boundaries and felt that nurses do not want all the power and that they know their professional boundaries. The participant who mentioned different categories of staff reported that lower categories may be allocated tasks beyond their scope and felt that here critical thinking could be of benefit. *"Not that you want all the power somebody is that you know your boundaries" (Participant 4, page 7).* A further key issue mentioned was the fact that as critical care nurses tend to do more

and more and that their scope of practice bounds them. *"I think that's what actually limits you, you are actually bound by your scope, the fact of your scope" (Participant 2, page 4).*

The researcher concluded that although scope of practice and professional boundaries were limitations of critical thinking they were not viewed in a negative manner.

4.6.3 Being Busy

During the course of the interviews, all the participants frequently mentioned how workload and dependent staff needs limited critical thinking. Although workload was occasionally mentioned as a barrier to thinking critically, the participants also referred to an intensive care environment as being very busy most of the time. Participants gave numerous scenarios of how colleagues were dependent on their senior staff members to guide them and to make decisions for them as they themselves were afraid to apply critical thinking skills. It was evident from one participant that if a nurse has too much work to do, he/she simply does not have the time to think critically. *"Don't have time to think critically, I've got too much work" (Participant 3, page 10).* Another participant believed that often work pressure included dependent staff and time constraints, allowing inadequate attention to specific scenarios. *"I think work pressure can be another factor, where you have so many people wanting help, attention, time is a limit so you are not giving adequate attention to that specific scenario" (Participant 5, page 1).*

One participant gave an account of how some staff members appeared to be very relaxed and relied on the shift leaders to think for them, therefore they did not need to think for themselves nor did they have to shoulder that responsibility. *"There's some of them that's very relaxed that the shift leader must think" (Participant 4, page 1).* It was mentioned that, specific to the intensive care environment, nurses reportedly waited for somebody else to lead them as they felt there must be a leader to guide and assist them, leaving the shift leader to do the critical thinking. *"I think especially in the ICU environment when you think about it, the nurses are always waiting for somebody to lead, so there must be a leader" (Participant 2, page 2).*

More frequently, participants believed that the staff on the floor were dependent on the shift leader and were not always willing to think for themselves or to make decisions as they were afraid that something might go wrong. Although participants believed that dependent staff would like more senior nurses to think for them, they believed that through

education dependent staff would grow so this mind set could be changed. "*They wait for the shift leader to come and do the, because they are so afraid if something goes wrong" and "They want you to think, but if you educate them and you explain to them then you will see they, they to grasp and they tend to grow" (Participant 6, page 2 & 6).*

Based on the study findings, the researcher concluded that dependent personnel, who were prepared for others to make decisions for them, as well as a high workload, limited the use of critical thinking skills and thus has an impact on the quality of care that can be provided to patients.

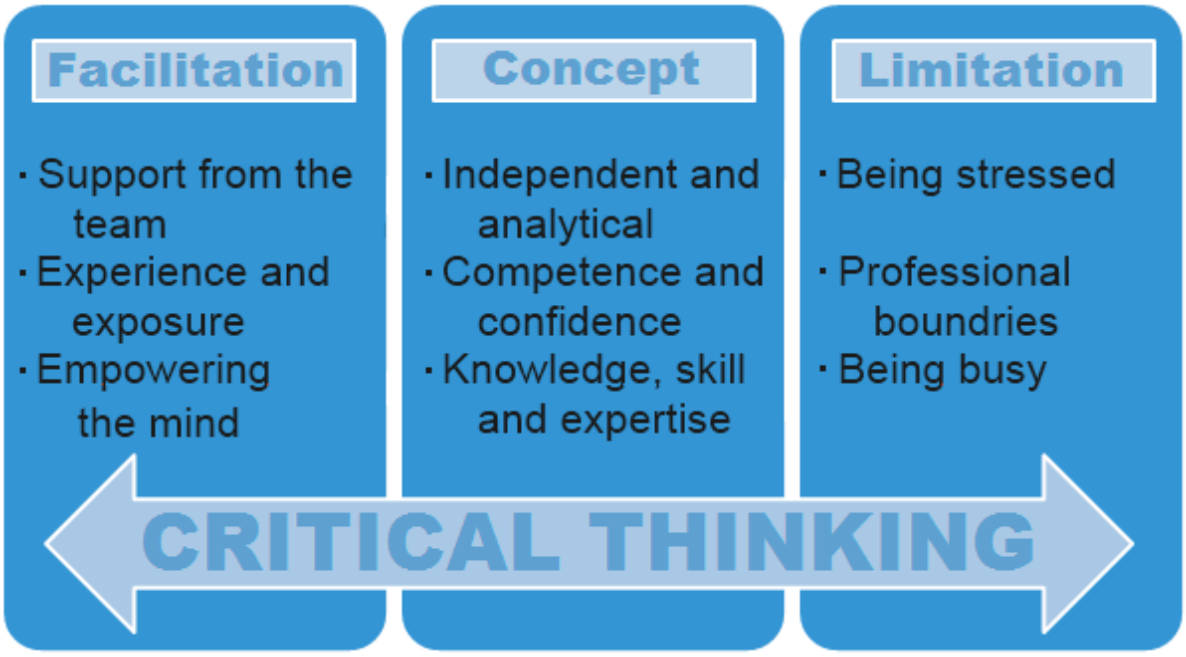

Figure 4.4: Concept, Facilitation and Limitation of Critical Thinking

4.7 CONCLUSION

In conclusion, the concept of critical thinking has been analysed within a unique nursing context. The concepts (ideas or thoughts), which emerged from the rich data obtained from enthusiastic participants, were divided into various facets which included independent and analytical thinking, re-iterating the importance of the critical care nurse's responsibility to think independently and analytically. Competence and confidence, important in any work environment, again cannot be compromised within specialist nursing care. Knowledge, skill and expertise contribute to the concept of critical thinking and complete the cycle created. Facilitation of critical thinking enables critical care nurses to openly accept support from the team in a collegial manner. Experience and exposure on a daily basis facilitates clinical practice and learning. In-service training and empowerment are a constant reminder of how privileged we are as critical care nurses to be able to improve our personal and professional development on a continuous basis. Limitations relating to the use of critical thinking are mentioned; one of these being stress which included anxiety and fear of exposure. Professional boundaries are seen as limits, although not necessarily in a negative light. Being too busy was also identified as a limit to critical thinking. However, with positive input and focusing on facilitation of critical thinking in the workplace, these limits can be considerably reduced or even overcome. The ability to use critical thinking has a significant impact on the quality of specialised nursing care by critical care nurses and they confidently express that it does make a difference.

CHAPTER 5: RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

Chapter five provides a discussion of the study data described in chapter four relating to the critical care nurses' perspectives and experiences of critical thinking in clinical critical care practice. The themes and sub-themes that emerged from the narrative data provide insight into and understanding of the concept of critical thinking as well as the facilitating and limits with regards to the use of critical thinking in an intensive care environment from the perspective of the participants. The emergent data reveals the similarities and differences amongst the participants who shared their personal views with enthusiasm.

The findings are discussed with reference to the study aim and objectives. Recommendations are offered with areas for further research, based on the study findings, identified. The limitations of this study are described followed by a short conclusion.

5.2 ACHIEVEMENT OF THE AIM AND OBJECTIVES OF THE STUDY

The aim of this study was to explore critical care nurses' perspectives and experiences with regards to applying critical thinking skill in clinical practice in order to support their delivery of quality nursing care. The participants' understanding of the concept of critical thinking was discovered through in-depth interview data analysis and the interpretation of rich, dense, raw data. The data in this study initially elaborated on the facets of critical thinking which influenced the application of critical thinking skill from the perspective of the participants. The participants later offered particular perspectives on the influences which facilitated and limited their use of critical thinking in an intensive care environment. Thus, through the data collection and analysis processes, the aim and the objectives of this study were achieved. The conclusions drawn from the data are discussed more fully in the following sections defined by the objectives for the study.

5.2.1 Objective 1: To explore the critical care nurse's perspectives and experiences of critical thinking in clinical practice.

To meet this objective, the researcher had to gain insight into the participants' own understanding of the concept of critical thinking in critical care nursing. Critical thinking appeared to be widely practiced although critical care nurses were not always aware of using this skill and often relied on their own personal experiences to describe their practice

of critical thinking. Despite this lack of conscious awareness of engaging in critical thinking, a clear understanding of critical thinking by the participants emerged from the data. While there was not a single unified understanding of the concept, most of the participants described the concept in similar terms.

Thus the common understanding of critical thinking as a concept centres on critical care nurses who can function as analytical practitioners who are capable of demonstrating safe decision-making and problem-solving abilities. Independent thinking is coupled with analytical thinking, this being a prominent feature of critical thinking described in the literature. According to Heaslip (2008:835), we must be committed to be self-directed and independent critical thinking by figuring out our own thoughts on the subject at hand. The concept of critical thinking focused not only on analytical thinking but also analytical reasoning and listening abilities.

Although interpreted with some variation by the participants the concept remained similar. Research study (Edwards 2007:307) affirms that by promoting the concept of nurses being analytical practitioners who are capable of demonstrating critical thinking skills in the clinical setting encourages the development of critical thinking amongst nurses.

The data collected indicated how the participants, personally, perceived the sub-theme of competence and confidence. Several participants refer to the fact that confidence plays an important role in the critical care nurse's ability to display competence. According to Jones and Morris (2007:110), clinical competence in the work place is cited as one of the most common requirements of critical thinking skill. One participant believed that "*competence is part of being able to help you in what you do and the knowledge that you have"*. The same participant gave a scenario highlighting that in an intensive care environment confidence is displayed by nurses using their knowledge and skills effectively in practice. There is no doubt that the critical care nurse will benefit from confidence in practice, therefore then, linking it to learning from previous experience and exposure which contribute to the building of confidence.

The observation by one participant of theoretical knowledge being the corner stone of critical thinking and imperative in an intensive care environment was supported by the focus group participants, thus further emphasizing the importance of a sound theoretical base to critical thinking. It is essential to maintain a high quality of patient care and in

order to achieve this, nurses must deliberately pursue the building of their knowledge base and skills.

Intellectual standards and integrity contribute towards the critical care nurse's responsibility towards her patient by her having the intuition to know when to report to a senior staff member or when to contact the doctor. Other findings indicated that critical thinkers work meticulously to improve intellectual integrity, as cited by Paul and Elder (2002:15).

The researcher concluded from the study findings that independent and analytical thinking were inherent to critical thinking, with competence and confidence influential contributing factors. Knowledge and skill were frequently mentioned by the participants as conducive to the concept of critical thinking. This understanding is supported by literature emphasizing that knowledge and skill need to be adapted to find solutions and make decisions (Edwards, 2007:303).

5.2.2 Objective 2: To describe the critical care nurse's perspectives of what influences the application of critical thinking skills in clinical practice.

There are many facets that influence the application of critical thinking within an intensive care environment. A common sub-theme of a facilitating factor that emerged from the individual as well as the focus group interviews was 'support from the team'. Participants' confirmed through their discussion that team support improves the quality of clinical critical care nursing. Team support was further elaborated on to include effective communication and the formation of good collegial relationships, these being able to offer some relief to the complexity of nursing. This sub-theme is supported by the view of Edwards (2007:306) depicting that critical thinking is likely to occur and continue when practised repeatedly and where supported by others. The aspect of team support offers a positive environment of psychological safety where conflict and intimidation is reduced to a minimum. Gaining and giving support to one another on an on-going basis builds a level of trust between the team members. Part of this support includes clinical facilitation which provides input for decisions that have to be made and problems that have to be solved. This understanding was supported by several of the participants during the individual interviews and the focus group.

Data which emerged from the study identified the role that active learning, possibly amplified by experience and exposure gained while working in an intensive care environment, plays in the application of critical thinking skill. It was identified that the majority of critical care nurses who work in an intensive care environment do so by their own choice. Personal experiences, whether good or bad, are expressed as having an impact on critical thinking; this was mentioned by several participants. Guided reflection of experience and exposure leads to good clinical judgment with safe decision making and problem solving. Edwards (2007:303) maintains that nurses will be unable to solve exclusive and elaborate problems if critical thinking cannot be applied.

Successful integration of theory and practice is more likely when critical care nurses apply what they have learned in class to what they are exposed to and have experienced in clinical practice. Critical care nurses should be motivated to network with colleagues who are also developing critical thinking skills so that experiences and insights can be shared and analysed (Quinn & Hughes, 2007:69).

Exposure to new situations with adequate support goes a long way to add value to clinical experiences; this view point was shared by several participants. Pertinent to empowerment is how in-service training and on-the-spot teaching contributes towards the level of nursing care delivered. The teaching of critical thinking skill using facilitated and guided problem solving techniques offers personal and professional development and growth. Other literature supports this by depicting that teaching critical thinking within the discipline of nursing is contextual, meaning that, specific skill and knowledge must be mastered within the process of nursing (Distler, 2007:58). Thus the study revealed sub-themes which revealed that the main facets of facilitation of critical thinking in an intensive care environment were support from the team, experience, exposure and empowerment, all of which emerged regularly from the data.

Limitations relating to the use of critical thinking were experienced personally by all the participants of the study. Emotional factors such as stress and anxiety were recognised and understood by individual critical care nurses and were regarded as being contributory factors towards barriers limiting the use of critical thinking. Fear of exposure and feelings of intimidation were also identified as limits to critical thinking. Other studies also indicated that what destroys critical thinking is when nurses feel offended or intimidated (Quinn & Hughes, 2007:69). Contributory factors to anxiety such as noise, overcrowding

and lack of privacy predictably affected the quality of clinical nursing care delivered by critical care nurses. Fear of making an incorrect decision or dealing inadequately with a problem left nurses feeling scared and intimidated. This sentiment was echoed by the participants. This could be due to a lack of competence and confidence or a lack of skill and knowledge. Emergency situations, predictably, sometimes also leave nurses feeling scared and unable to make prompt decisions which could lead to poor outcomes. Limited use of critical thinking may be compounded by both emotional and environmental factors requiring critical care nurses to adapt to their stressful environment as best as possible.

Professional boundaries, although considered limiting at times, were rarely seen in a negative light as critical care nurses can practice beyond their scope in an emergency situation giving them the autonomy to make urgent decisions without being bound by policies and procedures. Although boundaries depict limits, professional boundaries were also regarded as necessary to ensure safe quality nursing care. Good clinical judgment applied to patient care and the availability of senior nursing staff or doctors to share decision making and offer alternative solutions reduce the responsibility of the critical care nurse. Reviewed literature did not reveal discussion on professional boundaries, however, the researcher concluded that this limit did emerge from the data and was relevant in this study, as detailed by the participants.

Inability to cope with workload was viewed as limiting the use of critical thinking in an intensive care environment. Nurses who take a passive approach to nursing place their colleagues under additional stress in their effort to maintain adequate nursing standards. According to Duron *et al.* (2006:161), limits to critical thinking include nurses who are satisfied with taking a passive approach to nursing care. Emergent data revealed that critical care nurses may be afraid to make decisions and often rely on colleagues to make decisions for them, limiting the use of their own independent critical thinking skill. The literature contributes to these findings by suggesting that failure between integration of theory and practice results in an inability to solve problems, rigid and fragmented patient care and an unconcerned attitude in clinical practice (Meyer & van Niekerk, 2008:82).

Thus the study revealed sub-themes which depicted that the main factors limiting the use of critical thinking in an intensive care environment were being stressed, professional boundaries and being busy, all of which emerged regularly from the data.

5.3 RECOMMENDATIONS AND FUTURE RESEARCH

Through the process of data analysis it became clear that there were particular aspects of critical thinking application in a specialist environment that required support and could offer an improvement in the quality of nursing care, therefore the following recommendations are suggested. The researcher includes suggestions for further research in this section below.

To create awareness amongst critical care nurses of the need to practice critical thinking skill on a consistent basis, with the specific goal of improving the quality of nursing care in specialised nursing environments, may be considered the first step to reaching this goal. This could be achieved by creating an environment which is sustainable and conducive to support from the team by facilitating team cohesion. This could be accomplished by management approaches to promote collegiality, such as working in pairs, sectional shift leading and regular facilitated nursing care. Critical care nurses should be taught not only how to think but how to think pro-actively by being fully engaged in their patient care. This could be encouraged by routine bed-side teaching.

Limitation of critical thinking may be constructively reduced by analysis and evaluation of contributing factors which exist within an intensive care environment. These limiting factors include overwhelmed or scared critical care nursing staff resulting from a lack of confidence or competence. Once these limitations are identified decisive action needs to be taken to reduce them, such as team building activities, debriefing sessions after complex nursing situations and brain storming after resuscitation efforts. These may be done on a regular basis to persuade effective communication and to create a curiosity for learning.

Integration of theory and practice appears to remain a challenge in nursing. In-service training involving reciprocal knowledge and skill sharing in order to practice decision making and problem solving skills may be beneficial, allowing for the rational exploration of ideas. Facilitated problem solving coupled with support and guidance may offer a solution to convert dependent critical care nurses into independent and analytical thinkers. A positive work environment goes a long way to supporting personal development which in-turn may improve confidence and reduce feelings of intimidation.

A concerted effort to reduce noise levels by reducing environmental noise (for example, silent floor polishers) will demonstrate to personnel that every effort is made to support

them and offer solutions to their concerns and complaints. Excessive noise levels, overcrowding and a heavy workload often increase anxiety levels which affect the quality of nursing care given. An attempt by management to offer alternative solutions to problems encountered on a regular basis improves staff morale overall thereby facilitating the use of critical thinking which in turn improves the delivery of specialised nursing care.

Workload, as in being too busy, and staff shortages are always on the agenda. Every effort needs to be made to address workload. The concept of being too busy needs to be identified first to be able to address the problem. Once this has been established an attempt to offer a solution should be made by offering assistance to reduce the workload or improved competence by offering facilitated guidance. The concept of the workload requires further research to prevent improvised nursing care.

A combined effort by management and staff to create an atmosphere where critical care nurses are encouraged to recognise what may perhaps appear to be minor issues and to address these effectively should be made. Often a simple solution may be offered and individual personnel may be allocated to address these issues before they escalate into a complicated issue. By encouraging critical care nurses to be aware of their own surroundings and environment, by allowing them to get involved personally and by giving them the autonomy to make decisions where the quality of nursing care can be improved upon creates an atmosphere of working together for the same cause.

Critical care nurses should be offered the opportunity to reflect on their own actions on a regular basis. This reflection should be guided by colleagues and the main purpose of this would be to enhance personal and professional development and growth. Regular staff evaluations are important where personnel are offered progress reports and feedback on previous observations. Critical care nurses, considering the work environment, may be left feeling stranded thus constant evaluation and assessment allows shortfalls to be addressed in good time. Not only is a lack of confidence and competence detrimental to the critical care nurse herself, but also to the delivery of quality nursing care. It is therefore recommended that regular staff evaluations are done to uplift, give thanks where due and support critical care nurses in their endeavour to provide quality nursing care.

Based on study findings, the researcher suggests and recommends that further research be carried out in the intensive care units at the bedside to facilitate clinical nursing and to create an awareness of the benefit of using critical thinking skills.

5.4 LIMITATIONS OF THE STUDY

The study was limited to a single private practice sector in the Western Cape thus limiting the findings to this context. Due to the nature of an intensive care environment, availability of critical care nurses for data collection in the form of interviews, without compromising patient care, may also be seen as a limitation. The interview sessions did not always work out as planned due to unpredictable situations which needed to be dealt with without delay. The length of the interview was limited to 30-40 minutes once again due to demands imposed by the unit.

5.5 CONCLUSION

The unique highly specialised nature of an intensive care environment allows for the delivery of excellent and safe quality nursing care. With a complement of critical care nurses who are able to apply critical thinking to solve problems and make decisions, quality nursing care will be delivered. This study revealed that registered nurses working in critical care have a common understanding of what the concept of critical thinking implies in clinical practice. Particular factors emerged that either facilitate or limit the application of critical thinking, careful consideration of these factors will allow the facilitators to be emphasised and the limiters to be minimised thus supporting the individual nurse's application of critical thinking in delivering quality nursing care.

BIBLIOGRAPHY

Brink, H. 2007. *Fundamentals of Research Methodology for Health Care Professionals.* Second edition. Cape Town: Juta & Co. Ltd.

Burns, N. & Grove, S.K. 2009. *The practice of nursing research.* 6th Edition. Saunders. Elsevier.

Collins Essential English Dictionary, 2003. Harper Collins Publishers.

De Vos, A.S., Strydom, H., Fouche, C.B. & Delport, C.S.L. 2005. *Research at Grass Roots.* Third edition. Hatfield. Pretoria.

Distler, J.W. 2007. Critical thinking and clinical competence: Results of the implementation of student-centered teaching strategies in an advanced practice nurse curriculum. *Nurse education in practice* [Online],7:53-59. Available: www.ncbi.nlm.nih.gov/pubmed/17689424 [2011, 10 July].

Duron, R., Limbach, B. & Waugh, W. 2006. Critical Thinking Framework For Any Discipline. *International Journal of Teaching and Learning in Higher Education* [Online],17(2):160-166. Available: http://www.isetl.org/ijtlhe/ [2011, 29 June].

Edwards, S.L. 2007. Critical thinking: A two-phase framework. *Nurse education in Practice* [Online],5(7):303-314. Available: www.ncbi.nlm.nih.gov/pubmed/17689457 [2011, 10 July].

Ehrenberg, A.C. & Haggblom, M. 2007. Problem-based learning in clinical nursing education: Integrating theory and practice. *Nurse Education in Practice* [Online],7:67-74. Available: www.elsevierhealth.com/journals/nepr [2011, 30 June].

Elder, L. 2007. *The Critical Thinking Community* .[Online]. Available: http://www.criticalthinking.org/avoutCT/define critical thinking.cfm [2011, 14 February].

Government Gazette, 2006. No. 33 of 2005: Nursing Act, 2005.

Heaslip, P. 2008. *The Critical Thinking Community.* [Online]. Available: http://www.criticalthinking.org/print-page.cfm. [2011, 09 February].

Hardcastle, J.E., 2004. The meaning of effective education for critical care nursing practice: a thematic analysis. *Australian Critical Care* [Online],17(3):114-122. Available: www.ncbi.nlm.nih.gov/pubmed/15493859 [2012, 02 November].

Higgs, J. & McAllister, L., 2005. The lived experiences of clinical educators with implications for their preparation, support and professional development. *Learning in Health and Social Care* [Online],4(3):156-177. Available: www.citeulike.org/article/271604 [2012, 02 November].

Hodkinson, P. 2005. Reconceptualising the relations between college-based and workplace learning. *Journal of Workplace Learning* [Online],17(7/8):521-532. Available: www.emeraldinsight.com/journals.htm?articleid=1528924 [2012, 02 November].

Holloway, I. & Wheeler, S. 2010. *Qualitative Research in Nursing and Healthcare.* Third edition. John Wiley & Sons Ltd. United Kingdom.

Hsiu-Fang, H. & Shannon, S.E. 2005. *Qualitative Health Research. Three Approaches to Qualitative Content Analysis.* [Online],15(9):1277. Available: http://qhr.sagepub.com/content/15/9/1277 [2012, 17 February].

Jones, J.H. & Morris, L.V. 2007. Evaluation of critical thinking skills in an associate degree nursing program. *Teaching and Learning in Nursing* [Online],2:109-115. Available: www.jtln.org [2011, 22 March].

Kelly, D. Simpson, S. & Brown, P. 2002. An action research project to evaluate the clinical practice facilitator role for junior nurses in an acute hospital setting. *Journal of Clinical Nursing* [Online],11:90-98. Available: www.ncbi.nlm.nih.gov/pubmed/11845760 [2012, 02 November].

Khosravani S, Manoochehri H & Memarian R. 2005. Developing Critical Thinking Skills in Nursing Students by Group Dynamics. *The internet Journal of Advanced Nursing Practice* [Online],7(2)np. Available: http://www.ispub.com/journal. [2011, 14 February].

Lim, F.A. 2011. Questioning: A teaching strategy to Foster Clinical Thinking and Reasoning. *Nurse Educator* [Online],36(2):52-53. Available: www.ncbi.nlm.nih.gov/pubmed/21330888 [2011, 10 July].

Lisko, S.A. & O'Dell, V. 2010. Integration of Theory and Practice: Experiential Learning Theory and Nursing Education. *Nursing Education Perspectives* [Online],31(2):106-108. Available: www.ncbi.nlm.nih.gov/pubmed/20455368 [2011, 10 July].

LoBiondo-Wood G. & Haber J. 2006. *Nursing research. Methods and critical appraisal for evidence-based practice.* [Online]. Available: www.evolve.elsevier.com/LoBiondo/ [2012, 04 August].

Meyer, S. & Van Niekerk, S. 2008. *Nurse educator in practice.* Cape Town. Juta & Co. Ltd.

Paul, R. & Elder, L. 2006. *The Miniature Guide to Critical Thinking: Concepts and Tools.* Foundation for Critical Thinking Press. Dillon Beach. Available: www.books.google.com [2011, 10 July].

Quinn, F.M. & Hughes, S,J. 2007. *Quinn's principles and practice on Nurse Education.* Fifth edition. Nelson Thomas Ltd. United Kingdom.

Rule, P. & John, V. 2011. *Your guide to case study research.* First edition. Ultra Litho. Johannesburg.

Simpson, E. & Courtney, M. 2007. The development of a critical thinking conceptual model to enhance critical thinking skills in middle-eastern nurses: a middle-eastern experience. *Australian Journal of Advanced Nursing* [Online], 25(1):56-63. Available: http://www.ajan.com.au/Vol25/Vol25.1-8pdf. [2011, 21 August].

Stedman's Concise Medical Dictionary for the Health Professions, 2001. 4th Edition. Lippincott Williams & Wilkins. Balitmore.

Tanner, C.A. 2005. What Have We Learned About Critical Thinking in Nursing? *Journal of Nursing Education* [Online],44(2):47-48. Available: www.ncbi.nlm.nih.gov/pubmed/15719709 [2011, 10 July].

Taylor, L.A. & Littleton-Kearney, M. 2011. Concept Mapping: A Distinctive Educational Approach to Foster Critical thinking. *Nurse Educator* [Online],36(2):84-88. Available: www.ncbi.nlm.nih.gov/pubmed/21330901 [2011, 10 July].

White, L. 2005. *Foundations of nursing: caring for the whole person.* Thomson Delmar Learning. New York. Available: http://books.google.co.za [2011, 24 March].

APPENDICES

APPENDIX A – INTERVIEW GUIDE

The interview guide had two main components that incorporated two central questions and five secondary questions. These questions were asked in no particular order as detailed below:

Central questions:

1. What do you understand of the concept of critical thinking?
2. How do you think the application of critical thinking skill impacts on delivery of quality nursing care in clinical practice?

Secondary questions:

1. What are your thoughts on critical thinking in clinical practice?
2. Describe to me what you think facilitates the application of critical thinking skill in clinical practice;
3. Describe to me what you think limits the application of critical thinking skill in clinical practice;
4. How does critical thinking support the delivery of quality nursing care?
5. If Critical thinking is required to integrate theory into practice; do critical care nurses consistently apply critical thinking skill?

The interview guide having been tested in the instrument pretest was used as a guide and prompt for the researcher to ensure the interview remained focused and to allow probing to occur at any stage of the interview.

APPENDIX B (1) – TRANSCRIPT OF INDIVIDUAL INTERVIEW

TRANSCRIPTION EXAMPLE : RESEARCHER R

: INTERVIEWEE I

R My title is critical thinking in a critical care environment. There is a lot of critical work just because of the title; I am doing critical thinking within a clinical care environment. So what I need to know from you then, what do you understand by the concept 'critical thinking?'

I I think critical thinking entails where you have to make decisions where it can actually save the patients' life at that particular moment as well and very important decisions as well. You know that's basically what it entails you know to make those decisions that can actually save a patient's life or that can even contribute to a patient's stability as well.

R Yes.

I So that's the way I see things that are critical or critical, I don't know if that's correct though!

R Yes absolutely correct. Yes the concept itself, it's a thought or an idea, so it's nothing specific.

I Ja and of course and critical thinking is implied by analyzing as well, by analyzing things and by sort of making up your own mind when it comes to a specific problem solved. You can use specific problem solving skills as well most definitely and you have to think in an analytical way as well and you sort of have to compose a synthesis from what you see and then based on that you make your decision. That's the way I see it, the way I perceive it.

R Sure and how do you think the application of critical thinking skills impacts on the delivery of patient care in the clinical environment?

I I think it you know varies from patient to patient and of course with your certain, the contexts as well but I think it's actually very important you know because critical thinking actually allows you to make important decisions given time. And I will definitely say that will definitely improve on the quality of nursing care in the long run as well because by applying critical thinking you actually develop somebody's problem solving skills as well, to think for themselves and that's how important it is.

R And their decision making?

I Absolutely yes, yes.

R How do you feel in your environment, you can talk from experience or give examples, how is your critical thinking skills limited? What could limit it if one allowed it to be?

I I would say well basically that as far as I am concerned there are two important things, first of all it is your scope of practice and your biology as well.

R Yes.

I Most definitely I have to adhere to the law side, have to function in my scope of practice and then of course knowledge, if you have knowledge it makes things so much easier as well and if you don't know, always ask or always phone. Rather consult the doctor if you are not too sure about it but just as long as you do it, you know don't compromise the health or the safety of the patient, you know that actually determines your scope of practice because you have to have practice to adhere to the law. Other things as well, I think stress as well, you know sometimes when you are very stressed as well you know its not always easy to make that decision right there, you just see this patient; 'what now? What is going to happen to this patient, what must I do next?' and I think that's where team work comes in as well. Somebody comes to you and says listen Chris I think we should do 'this or this' or if I really am not too sure about it, I will just consult with the doctor, phone the doctor and ask him what should happen next in terms of the patients' treatment and that type of thing.

R Fortunately for us we do always have that backup plan.

I Yes, fortunately there's always back up and I must say, you know especially with Doctor … and Doctor …you know I must say there is always, you can phone them at any time and so from that side there is usually a very good back up.

R Yes, a nice support system there.

I Absolutely.

R Okay and then having looked at some of the limits, what do you think facilitates it? What will improve or encourage critical thinking?

I Well I think it will be good if they can perhaps even offer a workshop in critical thinking because many people are scared to develop lateral thinking as well and to just to think out of the box for a while. I don't know for some or other reason I have noticed that especially with nurses, they are you know a bit scared to think and to come to conclusions and you know that is quite important although I think they are going to do something wrong. So I think that we must actually train people to think critically as well and in some people it's imminent, you know some people can think critical but other people you need to teach. So I think that you need to educate people in terms of critical thinking most definitely.

R It is actually one of my absolute objectives of this whole study is to empower nurses to use critical thinking skill as I really believe ninety nine percent of the people have got it, it is becoming aware of it and actually using it in your environment.

I Most definitely ja and the training there is very important as well and I think [I am talking from my own perspective now and the training I did] but we were taught to think in a very critical manner as well and I don't know if that standards have changed you know or whether the nursing schools have a different approach now in terms of teaching their people when it comes to critical thinking so I am not too sure. I think it's important as well, you must be confident enough, sort of almost take ownership of the situation, make it your

own. People are sometimes scared as well you know for some reason, they don't want to do that or…

R I think because we get held accountable for …

I Ja that's true. Although that's understandable, you see that's where knowledge comes in as well if you know what you are doing you have got the confidence most definitely.

R What other personality traits do you think a critical thinker would possess or should have?

I Very important listen to other people's point of views, listen to other people, I think that's very important to listen to other people what other people have to say as well because that actually can you know, expand your critical thinking as well. Then of course I think you have to sort of be independent as well and do a bit of research on your own as well, consult with literature and do a bit of searching on Google, Scholar or whatever suits your fancy and just empower yourself and absorbing the knowledge that's available.

R Can I just ask then, research on your own pertaining to your work environment, pertaining to the knowledge and updating your skills?

I Yes I think with reading and absorbing literature yourself you know I think especially if you are not too sure about a patient's condition or you know try and make it your own, or as I say try and take charge and go and look it up and go and read it up. I think that's very important you know to sort of take ownership of things and just to do your own thing or you know, ask. I think another thing that really helps you greatly is the fact that we have our own clinical facilitators because that really helps a great deal so most definitely yes. Yes she is always available for in-service training which really makes a big, big difference especially if there are certain concepts that you are not too familiar with. So I think that is more, makes it a bit easier.

R And your take on management when it comes to applying those skills? How much scope do the shift leaders and the unit managers allow?

I It depends on who the shift leader is of course, so that really makes a difference because you do get shift leaders that are not that knowledgeable unfortunately, so you don't always feel sort of safe with that shift leader but then of course you get shift leaders that really know what they are doing, that has the confidence. So that makes a difference as well and I must say from a management point of view, especially with the unit manager [well that's my personal experience] is that she actually supports especially the baby Sisters that work there at the back, we get quite a bit of support from her as well. You know that especially 'moral support' so that makes it a bit easier as well.

R Yes, I think the moral support…

I What I like about … as well, she gets involved with nursing care. If there's a problem or we are really stuck she would actually just do the thing, you know do physical bed side nursing as well which makes it a bit easier as well.

R Okay that is nice. Your allocation of patients, do you feel people are specifically allocated because of their skill or is it often because of the sort of shortage of skilled nurses?

I Yes that's a difficult question. Mostly because of their skills but sometimes there's a shortage as well. So you have to make use of the staff you have as well and that can create a bit of a problem you know because ward people are not so sure, so sometimes nurses get thrown into the deep end and they are not too sure how to handle the situation and I think that can be a bit petrifying. I have noticed that with my colleagues as well but most of the time I think that we are able to allocate qualified, or the right staff to the right patients. In general it's not a problem but it does happen occasionally.

R And I think the better equipped we are with critical thinking skills, the more likely they are to cope with those kinds of situations.

I Most definitely, yes.

R And I think there is just this awareness of…

I I find it with nurses is also the fear of thinking critically, I don't know why. Like I am scared to think critically, I don't know why if it's a lack of knowledge or whether they had a bad experience in the past but that I am not sort of willing to take that extra step just to sort of expand my horizons a bit when it comes to thinking. I don't know why people are like that but they are a bit scared at times most definitely.

R Yes, yes and yet maybe the nursing profession was a bit stunted at one point and we are trying to get beyond that now.

I Yes most definitely.

R And you know nurses weren't always thought of as the brightest, greatest profession, so I think you know it needs to shift…

I I think most definitely the public's perception as well.

R Yes.

I I think mostly the public's perception, I think that has changed a bit but it is still not 100%

R Sure, Leadership styles? How do you think they influence critical thinking?

I Once again it depends on the situation, I think when it comes to like a resus for instance, then you can't sort of be a democratic leader, you have to be sort of, just tell people what to do but I think mostly most of the times in a normal situation its always good to be a democratic leader and let people make their own decisions most definitely. Democratic leadership works the best for me.

R I always say that if you do something and you can justify your actions then you know, most people will understand why, what, where?

I Yes most definitely.

R So if you can, if you've just got a good reason for that then…

I Absolutely, yes.

R Yes, we have covered decision making and problem solving. I also mean to ask you, do you think critical care nurses in your opinion, consistently apply critical thinking skills?

I No not always. Sometimes they just do sort of things sort of like they have been conditioned, you know sort of Pablo's little doggies and you ring the bell and they just have to do that little thing. I don't know why and ja, I think people should be more critical why am I doing this and is this the right thing and can't we do it in a different way as long as we stick to the principle you know? And some people don't want to do that, you know let us do it in a different way, just as long as you stick to it or you maintain the principle, that's the important thing at the end of the day.

R And your outcome is the quality of your patient care again.

I Absolutely and the safety of the patient. You know you can do it in a different manner as long as you stick to your principles and you create a positive outcome, most definitely.

R Communication, or lack of communication also between the doctors and the staff and even family members?

I Yes most definitely. I think communication, you know when it comes to hand over I have never had a problem actually you know in terms of that.

R Okay.

I But I think that's something, people really needs to pay attention to the way which they communicate with the relatives and the moms and the dads and that type of thing. I don't say that you have to tell them absolutely everything but I think that is something that needs to be looked into as well, that communication as well, absolutely.

R Okay. So you feel that there is a lack of communication especially when it comes to the parents of the sick children?

I Ja not always but it does happen sometimes you know and sometimes people are stressed as well and they don't want to sort of talked too much and the parents are petrified, they don't know what's happening or the visitors don't know what's happening. So I think that is something that needs to be looked at as well but I have noticed that sometimes people are scared to say too much as well and that's where once again critical thinking comes in as well. They don't want to say too much to the relatives as well just in case they say something and it's not going to turn out that way. So you know, its not going to have a positive outcome so I think people are scared sometimes to say too much.

R Yes, I think their knowledge of their situation can also impair their communication because you don't want to say something that isn't you know correct and the parents go off thinking…

I Ja by that I am not saying that you must sort of talk from a doctor's point of view but just sort of take charge of the situation and tell them from a nurses

point of view what is happening? I think that's quite important, some people are even scared to do that as well you know?

R Yes, that's the 'I'll talk to the doctor, he will tell you.'

I Yes, talk to the doctor.

R I think maybe that's where that confidence comes in again.

I Absolutely.

R And their knowledge and skills.

I Their knowledge as well mostly, knowledge is so powerful and will make such a powerful tool and if you are knowledgeable then there is so much that you can actually do with that but I think that is built basically on the corner stone of critical thinking that is knowledge.

R I think when we talk about critical thinking its actually an awareness and I think if we can create an awareness to say nurses are allowed to think critically, we are allowed to think.

I It's almost that it's not part of the nursing culture to think in a critical manner, it's almost no, its not allowed. I don't know where it comes from but it's a pity.

R Although from all the literature I have read it's not only in nursing. There is a shift and in a lot of the other professions there has also been that shift, so its quite interesting to see that its not only…but we definitely need to cross over there you know so that we can incorporate it more and I think a lot of it starts from a formal education point of view, where they actually teach the students from first and second year to think critically. Talking from an education point of view 'knowledge is power' obviously our theory, the correlation of theory and practice also impacts on quality care.

I Absolutely, most definitely but as I say if you have got a good theoretical knowledge of a certain case, then its so much easier you know, you have that sort of foundation you can refer back to. So that really makes it much easier.

R I think that sometimes can be neglected by our colleagues, you know they do their studies and then they work in an environment for 'x' amount of years and they don't as you say [and again the literature proves] they actually don't do self- research and self-knowledge.

I But I think they need to be motivated as well. (Yes)

I Some people are not motivated you know. So why do we have to think critically when we are getting such crap salaries and why do we have to go through so much trouble when we don't….and it's not just things like salaries, its things like…even things like that can have an impact on critical thinking, people are not motivated always. People they don't get credit for what they do all the time, so I think that really impacts on critical thinking as well. All those sort of 'modifiable' factors, outside factors, external factors most definitely have an impact on critical thinking as well. And stress!

R Stress?

I Absolutely.

R And I think that motivation, if the senior staff are motivated, you know if you do get someone in an unknown condition to maybe source an article, print it, bring it to me and say; 'oh you know you are looking after this child today, this is what I found." You know just to create an environment of 'let's teach ourselves, let's empower ourselves.'

I Oh absolutely. The environment needs to be conducive when it comes to training and critical thinking as well.

R And the stress factor? When you say stress, do people not cope that well, burn out?

I Ja well it depends on the individual as well. You know some people are so stressed at that particular moment that they can't think straight you know. So it's all about the individual as well, some people handle stress better than other people. You get people here that can be exposed to a hell of a lot of stress but they still maintain their critical thinking as well, so it just depends on the individual.

R And their coping skills are intact and how they manage it, compared to…

I Absolutely, the working load as well at the end of the day that really makes a big difference.

R Yes, a difference.

I That really impacts on critical thinking as well. 'Don't have time to think critically, I've got too much work, sorry' you know that type of thing.

R And all the paperwork and everything else that comes with it.

I Absolutely.

R How long have you been nursing for? When did you start your training?

I I started my training in nineteen, shoo, long time ago, nineteen voet sak, '87 and then I completed my training in 1990 and then I did my ICU training in 1997. If that's correct.

R Okay and how long have you been in ICU?

I Ever since 1994, so that's a long time.

R Okay, eighteen years?

I Ja, long time! [laughs].

R What other qualifications have you got? ICU and?

I Yes I've got the two, the ICU and I specialized in cardiology, cardio-thoracic nursing and then I did a course through UNISA as an HIV AIDS Counselor and then I have got a BA in theory of literature and languages, I have got a an Honors Degree in Theory of Literature, I have got a Master's Degree in Dutch Literature and then the Doctorate in Afrikaans Literature and currently busy with post-doctoral research.

R Amazing! You are by far my most qualified participant! [laughter]. That's a bargain I say.

I I enjoy it, its nice. I think even that helps me to think more critically as well.

R Yes.

I Because everything is interwoven at the end of the day and lots of people ask me; 'what does literature have got to do with nursing?' Most definitely a lot because it's about the way in which you think and apply knowledge and critical thinking and being analytical!

R And analyse.

I Yes most definitely, analyse all the time

R And synthesize.

I Absolutely, that really makes a big difference.

R I think that was it, is there anything else you wanted to add?

I I think the important thing is that people need to get credit for critical thinking as well and they should be rewarded for that as well, that's very important.

R It will encourage it to be used more.

I Yes, people must be motivated all the time to think critical as well, I think that is very important.

R Almost like time to think as well because it's essential at the end of the day.

I Absolutely, yes.

R You know it's really, really good for quality nursing care.

I Without always talking about money or financial needs, there are other ways of acknowledging as well and giving people credit for what they are doing and that could make a big difference.

R I think sometimes just a thank you at the end of a shift has….

I Yes that is so important. Thank you for your hard work, that means more than anything else at the end of the day.

R Yes, just that someone acknowledged that you really did what you had to do. Okay if I think there is nothing else, there is nothing from me as well. We can talk to you all day as you are very interesting!

I Thank-you!

[End of Recording]

APPENDIX B (2) – TRANSCRIPT OF FOCUS GROUP INTERVIEW

TRANSCRIPTION EXAMPLE : RESEARCHER: R

: INTERVIEWEE: 1 – 5 (I/1 – I/5)

R Morning, thank you very much for participating in my study. I have got signed consent from everybody and my research assistant will take some notes. I don't know if you guys have had a chance to think about what the topic was so I am actually going to do the same, exactly the same. So this is not a test I just need as much participation as possible. It is a group discussion. I am not going to essentially lead it. Everybody can just chat as they feel free. So really I am just going to cover the same topics. So after the individual interview you perhaps thought about it. Can I ask again then what is your concept of critical thinking, when you think about it again in the critical care environment?

I/4 Well, that is basically that you can make decisions and analyse at all times and have a critical approach when it comes to problem solving. I think that is a very important or integral part of the critical thinking as well. Problem solving skills you know if you can do that independently and that is the manifestation of your ability to think critically.

R Okay that is nice. Independent. Anybody else?

I/5 The past that will assist you in making a decision through your critical thinking process.

R I like that using your past experience to draw on that and try and come up with an idea. Thank you. Anybody else?

I/1 I would just say it is like the last time it is just like thinking outside your box, I would say. Thinking more than when things happen and thinking further than what your scope allows you to do.

R Okay.

I/2 Obviously, your skills is very important then. Your skills, your experience and using it yes and by using it you could prevent something from really happening.

R Before it is too late. Okay and then how it affects our quality of nursing care obviously and in a positive manner I am sure you will all agree with that and how would you say it does that for us? Improves our quality in nursing care?

I/4 I think if you think critically you know what actually happens is that one can actually see the broader picture and that one can actually identify things that are so called obvious phenomena. Because people seem to think for instance, let me give you an example, if you say for instance you do a bed wash of the patient you think okay we are going to turn the patient and we are going to wash the patient and we are going to just have to do what we have to. I think by actually you know even if you do a small task is to think critical and to look at it from a different a totally different

view point in order to identify other problems and I think that you know might help you, not just with problem solving but that will itself contribute to quality nursing care as well.

R Absolutely.

I/4 Yes because we tend to take the basic things for granted and that is the way it should be and that is the way we do it. You know the basic needs you know, needs a critical approach as well. Basic care as well.

R Okay and the quality of nursing care?

I/1 It just helps you to think ahead and prevent things from happening. So you think ahead and you think of doing things better.

R Okay, sure, and doing them right.

I/2 That is a critical care nurse, you think now how am I going to turn this patient? How am I going to align the tubes you know to, you have to, you need to think critical because anything can happen if you don't have the knowledge and you don't think before you are really there and you start doing the job.

I/5 You know and it happens so quickly when you look again and say for an example: suctioning a patient you know they don't know if the patient goes into a bradycardia that they need to stop. So that is where it seems such a simple task but you actually need to think about what you are doing in everything that we do.

I/3 Can I add something on?

R Please do.

I/3 Something is always a problem in the mornings when the patient must wash your patient but hasn't had a good sleep and the patient is really now having a rest and then you must wake your patient to wash. What is so important at that time? Maybe a patient was not stable, maybe or whatever the case may be. The patient is nice and stable, the patient must rest and now that patient must be woken up and all that routine must be done. And I always somehow I feel why can't I just leave the patient to sleep and have a little rest because the morning the routine is going to take place and somehow as you are going to be the one to wash and that person can find the time during the day to actually do that wash. And I find that people are so much like robots. It has to be done. Wake-up. Go and wash. Do that. And I think even that manner especially upstairs because most of patients are mobile and I mean they can wash themselves and I mean somebody sometimes asks so why don't you leave the patient to sleep and then early in the morning the person can go and wash. You know a wash for me is not so important when the patient can sleep and have a rest. I am not saying all the time but I just find that sometimes you can leave a person to have a little extra rest and then they can be washed later.

R So what I am picking up is that you are saying that even the routine has to be followed, they have got a set routine in the department.

I/2 Where the patient's blood pressure is sitting right on the floor and no the nurse insists we have to wash the patient now. Yes a critical care nurse will think and say no that patient's blood pressure is quite low I don't really think, you know that is

where the skill also comes in. There I think it is not important because the blood pressure needs to be up, the patient needs to be stable, before they turn the patient and turn the patient.

[Inaudible – too many people talking at the same time]

I/2 There the critical thinking comes in and explain to the nurse here is the reason why I am not doing it. I am not going to wash the patient now because he is definitely not stable.

R I think at some point if we can speak about it, we can justify your actions and say this is why I am not or I am then it can be, that is a very good point that.

I/4 I would say rigid thinking is lethal.

I/5 The patient as well, we have to listen to them as well.

I/3 That is where listening comes in, and then we can actually say you can still find the time in your day to actually do it, and it also affects our quality of nursing care you know. Our patients when they go home when they fill out that questionnaire then they say you know their skin has been worn thin.

[Laugher]

R Because they have been washed so often!

[Everyone laughs]

R Okay what would you say limits our ability to think critically?

I/4 I think fear, mostly. You know it depends on your expertise, that is definitely knowledge as well, and scope of practice, as well. For practicality it can even be a psychological thing as well. You know sometimes people don't want to think critically because of work load and because the person doesn't perhaps have enough confidence in their own ability and that is something that can be a very individual thing as well. And then of course stress, personal stress definitely plays a role as well. People stop thinking critically when they get exposed to a great deal of stress, it is like they freeze and I think that it is important that they must find ways and means of overcoming that stress in order for them to promote critical thinking and so on. But it is very complicated. It is not just sort of a problem that one can solve instantly.

R I think if I remember we spoke about [interrupted – inaudible – too many people talking at once]

I/5 Having a bad experience and thinking critically and then being afraid to actually use it again.

R Yes, because you are criticized for that action.

I/2 Yes, so you tend to hold back.

R You know if you don't do that or when you don't want to think critically the doctor will come around and say can't you think for yourself.

I/2 Yes.

R You know so it is almost like we you know see if your sort of decision making oscillates between [inaudible]. [Laughs] If I can put it that way.

I/3 If I can just add on fear, I was called seven/eight o' clock and this patient was going for some gastro procedure. The patient was not going to theatre so when I came the doctor was putting in a a-line. The patient was diabetic and she was also on insulin, not ventilated. So we are inserting lines in the patient. So now the first thing is we check the sugar but whilst you are trying to stabilize the patient then fluid is running in the arm then you need to transfer it here. But you need to stabilize your patient first and once you stabilize your patient then you can transfer. For me that is how I will do it. Stabilize my patient and then I will transfer him you know. Then in that process I was thinking what is the sugar so I told her what the sugar was but I went in and I checked the CVP and I flushed it and I connected the port from the side. That in that process you know what she was doing she was commenting something and she said you know this thing is broken and I said I have just flushed it. I have just connected it then it was my word against her word then she decided to leave me. She deserted me because I answered her back.

R Okay.

I/3 And she decided to leave me. And this man eventually went on and then she left me and I was there and I said Lord just be with me I am going to look after this patient, I am going to leave her because she is also deserting me. So I looked up at this patient and the patient's heart rate was going up and the patient was getting more, so I upped the morphine up to two or whatever. But I sort of stabilized the patient and she left me the whole night. Only five o' clock she came around to have a look at the patient.

R Yes.

I/3 But I mean those are things that sometimes you actually, if I didn't feel comfortable to look after that patient you know then she would have sort of taken over. But sometimes there is that fear that you have if you feel that you, you are never competent enough in an ICU. You always need the other people to support you. But that day I thought I will look after this patient I will do the things because now if I don't follow what she is saying or whatever she will. So that fear sometimes does come in the environment but it is not your environment to come in as an intruder.

I Mm. [General consensus]

R Sometimes that is the stresses that you are working under!

I/3 Yes people know the doctors, the people know the things but I said look I am going to maintain this patient I am going, the patient is fine, the patients are fine. I am going to give a little more morphine for the pain I am going to sort that you know the way I you know and the patient was fine.

I/2 Also private versus government as well where are private you are actually limited you can't, I won't say all the time. It depends also who the doctors are like I said earlier on. The patients have got their own doctors so you need to sometimes feel the doctor out to know what he really wants and so on whereas and you can actually come on board and say doctor I was thinking of doing this and this that way. And with government you are actually free to do it that way. Your input is really valued and so on. So like I said that fear of you know you don't really want to because the doctor will say at the end of the day. I remember one nurse that was

actually asked, who is the doctor here you or me? She is trying to give her input there and knowing she is a critical care sister and qualified and everything and she was totally put off by that and I didn't see her again. She didn't come back to our department again. That can also sort of limit you and I mean it is a good sister, a very good sister. That is what she is doing.

R So I hear attitudes from multi-disciplinary thinking can also affect practice? We spoke about that earlier. How would that limit our critical thinking skill?

I/1 Well I think it is also fear that if you go above your scope of practice obviously and something happens then you are in trouble okay so that will limit you there, and then your colleagues as well. They can also keep you from thinking as they said like the doctors that will like put you down by saying your colleagues can also do that. Very subtly but they can do that so that you don't want to use your brain.

R Yes.

I/1 Because otherwise it is this, that and the other and the story goes around and the story gets told over and over and over again.

R And as you say sometimes it can be quite subtle.

I/4 Imagine the factors as well you know some doctors have professional jealousy as well. Say for instance there is a new nurse now working here. Who is she to come with her ideas, we have been doing it like this for years and years. So the thing is that a combination of fear or change, at the same time it almost like, I mean everybody learns on a daily basis.

[Agreed consensus]

I/4 And some, for some reason you know some people think they have all the knowledge and there is not such a thing that exists because every single individual, every human being still learns on a daily basis. You know I think we just have to bear that in mind as well irrespective of who you are, where you come from you know just be humble when it comes to that thing and as she says listen to other people as well. It is amazing what you can learn from other people you know just by listening and observing as well.

R Exactly yes.

I/5 Protect your ego but he protects himself at the end of the day.

R And you know there is also jealousy. It is problematic and there are sometimes new sisters arriving and we need to embrace them and we can you know because as you say we learn every day.

I/4 I think that is where emotional intelligence comes in as well.

R Sure.

I/4 Because xxx comes to me she tells me Chris listen here I think it is better if you do it this way I will show you why and then I have learnt something from it. You know don't just regard that as a personal attack on your expertise or whatever you know just see it as a learning curve, a learning opportunity. You are going to have to sort of enhance that emotional intelligence as well because people, some nurses are

very territorial. You are not allowed to touch their patient [everybody chats at the same time] Very territorial and I don't know why where that actually comes from.

R That is interesting, territorial.

I/4 Yes. Very territorial and you are not allowed to go near there or say anything or touch their charts.

R Yes.

I/2 I was thinking about it when you go around and you go and check on the charts the charts are never there. And if you stay behind and you must do the obs the charts are never there and as you need to do the observation or so forth you just don't find the chart. Where do you find it? With the sister! [Everybody laughs], in the tearoom.

[Everyone chats at the same time]

I/2 What did the doctor say you must add on here, I will add it and he said well just get the chart I will add it I know how to write, I was quite sarcastic that time and now I will write it now and also write the orders in and that is how you know you can actually just miss-communicate because xxx the chart and I can't say what I want to and it just gets a bit hectic and that message hasn't been passed on.

R Your space!

R [Laughter] My space! Leave alone!

I/4 Okay so that is, we spoke about the limitations so what would you say encourages critical thinking?

R Just the opposite of what we just said now I think. It is just total opposite. If people change their attitudes. If doctors, if sisters, if the unit manager, if the staff itself change their attitude towards, rather tend to have a better environment than wanting to have better patient care.

I/2 And they are open, yes and they are open to all these changes and suggestions.

R And again that is the whole aim of my study, it is really to create an awareness and that we really have got the ability to use our critical thinking skill.

I/5 I think that is why we are working in ICU.

R Yes.

I/4 I think sometimes you know when people are scared of enhancing their sort of natural senses and instincts. Sometimes you just trust your instincts. Say for instance something is wrong with your patient and then something just tells me this is not right. You know go with that instinct because that is always going to be very accurate as well. People are sometimes sort of scared to use that sort of instinct, that sort of sixth sense you know that this is what I must actually do. It is a very reliable tool to use most definitely and people are a bit scared to use that as well.

I/1 I just, sorry, I just, I was listening to xxx now saying that is why we are here so that we can think critically, but I think I also said the last time that I think encouraging critical thinking in the wards and at the college also help so that the system, the

staff and the nurses can also think critically as well. [Everyone speaks at the same time.]

R Yes they are like xxx said so that you can see and you know this glucose level has been twenty the whole day something must be wrong even if you get the insulin then it is either that there is no insulin or there is something wrong with the patient or you know.

I/2 [Everybody talks at the same time] [Then you search the cupboards!] [Laughter] That has happened before!

R If they start at the college by allowing people to think critically then I think we can yes.

I/2 [Everyone talking at once] as well as [too many people talking together]

I/4 Now there was this lady as well the sugar was twenty as well and I couldn't understand it and eventually they opened the drawer and the lady said 'ag my kind ek was so lus vir 'n soetigheidjie.' [Everybody laughs] She really wanted to have something sweet. Something just told me just open that drawer, I don't know why, it was here is something here cooking [laughs] I couldn't understand it and here she was polishing the whole packet of romany creams. [Everybody laughs]

R Okay I am going to run through one or two of the topics or ideas that came up in the individual interviews and if anybody has a comment I will appreciate that. Let's say communication. I think a lot of that has been covered but if anybody has a comment on building communication. Even with our unit managers and shift leaders.

I/1 I think if people come, if a thing was done well then say it was done well. Go to the person say you have done a great job and don't keep that side of you hidden. You know encourage them, bring it out and by encouraging them and when you communicate you ask the questions and make the people think and one to think and one to answer.

R You know especially when the shift leader that comes around.

I/1 You know tell the person why it wasn't done but you can do it like this and this so that they know and they don't have the fear that somebody will shout at you because that person is trying to explain to you then you won't have that feeling now I done something, wrong I went to that person I told them so it is not going to happen again.

R You have learnt from your mistakes.

I/4 Absolutely.

R Um, [laughs] motivation. We need to motivate each other.

R Allocation of staff?

I/1 I think sometimes you have to use your discretion when you allocate. You know you get ICU trained people that can handle certain cases and you get a sister that is not even ICU trained but that is where experience comes in that can handle looking after a critically ill patient so yes you have to use your discretion and think, you have to know your staff to allocate. Because sometimes you allocate agency

staff to a certain patients and they do much better than the permanent staff and then sometimes you allocate them and they can't handle it. You have got to know your staff, that is very difficult sometimes.

R Um, I think we spoke about overcrowding and the unit is very busy and I think that is also probably one of our limitations where we actually just don't have time.

I/3 So sometimes with the noise it is not like the staff is making noise but because it is very crowded, maybe it is visiting time the patients visitors come and then they elderly people speak very loudly and us maybe a new admission coming with all their, so it gets very crowded and sometimes patients stuff is very you know noisy more than some patients get really agitated, they cannot sleep, they want to come home and a lot of complaints come out and the visitors also. So it is mainly other things, the patient not communicating with you because they are agitated.

R Yes. Okay.

R Sorry may I just ask you, you said it aggravates many other things, how does it affect you as staff members, with regards to thinking critically?

I/1 Because the patient is very agitated her blood pressure goes up and they are phoning the relatives and they must be fetched you know the time when we were there, they get confused, and that creates lots of commotion.

R Distractions?

I/5 Yes, and I mean you move away from your actual nursing when you have to serve all these other social problems. I think that is where trying and justifying and being there for the company and explaining and some relatives come to you very hard.

I/1 I think sometimes you switch off and you don't want to think critically because there are these visitors and the patients and their visitors are a pain so I am not interested. I am just going in there just to do what I have to do and that is that. You know you have that attitude and then you start building up an attitude then you don't see the bigger picture. You don't see the complications that can happen around you. Not just with that patient but because you are now so worked up and you don't feel like being involved with this patient so you just cut yourself off from the patient and the visitors.

I/2 I think again that it is visiting time again that is the way I have always been nursing my patient is when it is visiting time I will allow the patient to have good quality visiting with his family members. Why must you be around there and because if you are always around, I know with some nurses they are there, they write their stuff down, they do the observation and stuff. Why can't that just be done afterwards? Let the person spend visiting time with their family because there is only an hour and then you can come in because most of the time you are around and everybody else goes home then the family end up asking you questions that you are not supposed to answer number one, your patient has got this pain that he never complained to you about and as all of these things actually add up and at the end you become agitated. You are being stressed unnecessarily where you could have just been planning your day, visiting time is going to be visiting time and not do your washes in visiting time and you end up with the visitors staying much longer than they are supposed to and you as a person give your four o' clock xxx and you cannot give it because the visitors are there. You know it is a ripple effect.

I/5 You see that is where the central nurses' station helps because you can move away from there but you can still see everything that is going on here. It is not so easy to do it. And how far can you move away from the bed then you use total sight of what is going on, otherwise you have that complaint of the nurse is not there. [Everyone talks at the same time]

I/2 What we do is I introduce myself to the visitors, my patient's visitors and I say who I am and if there are any questions that they need to ask they can ask me and they know who I am and they know and I have seen that helps for me. If I give them that the visitor which is mainly the main member the father, the sister or whoever, a rundown of what happened today. The patient had a good rest, this is what happened, this is doctor's plans for today, you find the mother might be a bit agitated but this is the reason why and what. If you do that whole thing then they actually, I don't have that problem. This is how you plan your day and how you interact with your visitors.

I/2 I always move away at the monitor side there and I will tell them I am going to sit there and I am going to let you just enjoy your visiting with your mother or your sister.

R But on that note do you think as nurses we use our critical thinking skills consistently or are there times where we just actually don't want to think? You know? You know you just think it is too much now, how can you sort out this problem by using your skill? Without it becoming a problem? So approach the visitors and say I will be here if you need anything.

I/2 Yes. I think if you can actually just use it. And you use your brain yes because you actually create your own problem. That the visitor says sister the monitor is going to go off and you are not going to be here and I can see it is already going off now and it is green and it is red. He knows all the colours of the monitor already.

[Laughter]

And maybe it is for her part but when you orientate your patient and you tell your patient this is going to happen, there is a central monitor in the front if you see I am not running to come and cancel the alarm because there is nothing you will be fine. Somebody will cancel it there is a sister sitting there and a nurse. For me it is like you are planning your day and you have a much more controlled patient.

R It just works well.

I/2 Yes get the patient involved, get the family xxx. If the family phones it is so annoying at times. You have to answer all these people but it is part of it. You have to have a happy patient and family because they know what is going on.

I/1 And then this part to communicate with the family.

R Yes. Okay then I think we need to wind down. The integration of theory and practice, do we need critical thinking skill to integrate our theory with our practice?

I/3 There are times, it is your knowledge, it is what you know, it is what you will be.

I/2 Apply and practice.

I/2 It doesn't always go like you said earlier. You mentioned earlier about the nurses, it is experience, she knows you can actually trust her more with the patient than the one that is actually not, so it works both ways you know.

[Everyone laughs]

R Oh I think we just about covered everything.

[Everyone talks at the same time]

R Would anyone like to add anything?

I/1 Yes I would just like to say thank you for inviting me to come and do this.

[Laughter]

I/1 And do I really have to [everybody talks and laughs at the same time]

I/1 I am always the one [everyone talks at the same time] Anyway it was quite interesting I mean with the group. I mean I said what I thought when you asked me all the questions but now they have different approaches of thinking, different ways of seeing things and now it makes me also see.

R I have got some lovely information and actually what I will do is once my study is complete, I will get a copy of my dissertation to you guys you know to all the participants and then can we create awareness even if it is just amongst the five or six of you that we have got an awareness of critical thinking and pass it onto your colleagues.

I/3 Can I just add one thing. Culture. That is very important in our critical thinking. I was thinking if you are nursing somebody, think where they come from.

R Yes.

I/3 Sometimes you can easily brush off some things.

I/1 I think that is most probably something that is coming up more that they are teaching the students more because I did my training and that wasn't a thing that was really, you just mention who was a Jehovah's witness and that was that. You never mentioned about Africans and the way you should say and certain things you shouldn't say to a man or certain things you should, you know things like that.

I/4 Definitely.

R And not to be judgmental.

I/2 We aren't here to judge our patients we are here to care for them.

R The most important thing.

[Everybody talks at the same time]

R The lap tops are on back order.

[Everybody laughs]

R Thank you very much.

Field worker: Thank you everybody. It really is as doing research um cause I am also, I have done my interviews and my focus groups and that and it is quite relevant to us as nurses to be, to participate in research I think and it is really a great help if you can help us out like this. I tell you what it is a huge thing. It is all very well people saying oh you just need to do research and when you see these published papers that come out that we don't read it is a lot of work that has gone into that because everything that we do now has to be evidenced base essentially. It is a lot of work that goes into that.

[Everybody laughs]

I/4 When you come to the post-doctoral that is nice. Then the fun only starts! Depending on whether or not you are doing a clinical or non-clinical study as well that makes a big difference.

R Yes.

I/4 You know it is not easy. Because the non-clinical study you have to be very careful of what you say and everything is sort of a hypothesis and you can't really prove it but whereas you are doing your type of thing it is where you have to have scientific proof. So I think you have to lay down that foundation and that is difficult as well.

Field worker: So now I definitely read articles in a new light when I read published articles because then I know how much work has actually gone into it. You appreciate it.

[Mm – overall consensus]

R Yes. I will definitely get you a copy of my findings.

I/4 I think this article is also like doing a mini dissertation you know.

R It is.

I/4 It is blood, sweat and tears. I now I have written an article recently for the, in Afrikaans, tydskrif vir letterkunde, or the journal for theory of literature, it is a helluva lot of work although it only consists of thirteen pages this article it is blood, sweat and tears because they keep on editing the things and they keep on sending it back like four, five, six times. You know you just get so gatvol! [Laughs]

Field worker: But it is the same I mean you know with our proposal you can imagine our thesis now that your dots have to be in the right place, your colons, your semi-colons, the way you reference things has to be absolutely pertinent.

I/2 I know it is quite something.

I/4 Not to mention the indentation of paragraphs and all the technical issues.

R We really appreciate it, again thank you very much.

[End of Recording]

APPENDIX C – ETHICAL APPROVAL NOTICE STELLENBOSCH UNIVERSITY

UNIVERSITEIT·STELLENBOSCH·UNIVERSITY
jou kennisvennoot · your knowledge partner

Approval Notice
New Application

02-May-2012
Hendricks, Lucia L
Stellenbosch, WC

Ethics Refernce #: S12/02/054
Title: **Critical thinking in clinical critical care nursing: The perspectives and experiences of critical care nurses**

Dear Sr Lucia Hendricks,

The **New Application** received on 21-Feb-2012, was reviewed by members of **Health Research Ethics Committee 2** via Expedited review procedures on 22-Mar-2012 and was approved.
Please note the following information about your approved research protocol:

Protocol Approval Period: **02-May-2012 -02-May-2013**

Please remember to use your **protocol number** (S12/02/054) on any documents or correspondence with the REC concerning your research protocol.

Please note that the REC has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

After Ethical Review:
Please note a template of the progress report is obtainable on www.sun.ac.za/rds and should be submitted to the Committee before the year has expired.
The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number projects may be selected randomly for an external audit.
Translation of the consent document in the language applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372
Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Provincial and City of Cape Town Approval

Please note that for research at a primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthres@pgwc.gov.za Tel: +27 21 483 9907) and Dr Helene Visser at City Health (Helene.Visser@capetown.gov.za Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

We wish you the best as you conduct your research.
For standard REC forms and documents please visit: www.sun.ac.za/rds

If you have any questions or need further help, please contact the REC office at 0219389207.

Included Documents:
Protocol
CVs
Consent
Declaration
Synopsis
Checklist
Application

Sincerely,

Mertrude Davids

REC Coordinator

Health Research Ethics Committee 2

APPENDIX D – RESEARCH COMMITTEE APPROVAL OF RESEARCH

Tel: + 27 (0)11 301 0000
Fax: Corporate +27 (0)11 301 0499
76 Maude Street, Corner West Street, Sandton, South Africa
Private Bag X34, Benmore, 2010, South Africa

RESEARCH COMMITTEE FINAL APPROVAL OF RESEARCH

Approval number: UNIV-2012-0012

Ms LE Hendricks

E mail: hendricks.lucia@gmail.com

Dear Ms Hendricks

RE: CRITICAL THINKING IN CLINICAL CARE NURSING; THE PERSPECTIVES AND EXPERIENCES OF CRITICAL CARE NURSES

The above-mentioned research was reviewed by the Research Committee's delegated members and it is with pleasure that we inform you that your application to conduct this research a has been approved, subject to the following:

i) Research may now commence with this FINAL APPROVAL from the Academic Board of (Research Committee).

ii) All information with regards to will be treated as confidential.

iii) name will not be mentioned without written consent from the Academic Board of (Research Committee).

iv) All legal requirements with regards to patient rights and confidentiality will be complied with.

v) Insurance will be provided and maintained for the duration of the research. This cover provided to the researcher must also protect both the staff and the hospital facility from potential liability

vi) In accordance with MCC approval, that medicine will be administered by or under direction of the authorised Trialist

vii) The research will be conducted in compliance with the GUIDELINES FOR GOOD PRACTICE IN THE CONDUCT OF CLINICAL TRIALS IN HUMAN PARTICIPANTS IN SOUTH AFRICA (2000)

viii) must be furnished with a STATUS REPORT on the progress of the study at least annually on 30th September irrespective of the date of approval from Academic Board of Research Committee) as well as a FINAL REPORT with reference

to intention to publish and probable journals for publication, on completion of the study.

ix) A copy of the research report will be provided to once it is finally approved by the tertiary institution, or once complete.

x) has the right to implement any Best Practice recommendations from the research.

xi) reserves the right to withdraw the approval for research at any time during the process, should the research prove to be detrimental to the subjects or should the researcher not comply with the conditions of approval.

APPROVAL IS VALID FOR A PERIOD OF 36 MONTHS FROM DATE OF THIS LETTER.

We wish you success in your research.

Yours faithfully

Prof Dion du Plessis
Full member: Research Committee & Medical Practitioner evaluating research applications as per Management and Governance Policy

Shannon Nell
Chairperson: Research Committee
Healthcare Holdings Limited
Date: 25/5/2012

APPENDIX E – PERMISSION FROM PRIVATE HOSPITAL FACILITY

Tel: +27 (0) 21 480 6111
Fax: +27 (0) 21 424 0826
181 Longmarket Street, Cape Town, South Africa
PO Box 15364, Vlaeberg, 8018, South Africa

18 May 2012

LETTER CONFIRMING KNOWLEDGE OF NON-CLINICAL FOCUS RESEARCH TO BE CONDUCTED IN THIS FACILITY

Dear Lucia Elizabeth Hendricks

Re: Critical thinking in clinical critical care nursing: perspectives and experiences of critical care nurses

We hereby confirm knowledge of the above named research application to be made to the Research Committee and in principle agree to the research application for subject to the following:

i) That the research may not commence prior to receipt of FINAL APPROVAL from the Academic Board of (Research Committee).

ii) A copy of the research report will be provided to once it is finally approved by the tertiary institution, or once complete.

iii) has the right to implement any Best Practice recommendations from the research.

iv) That the Hospital Management reserves the right to withdraw the approval for research at any time during the process, should the research prove to be detrimental to the subjects / or should the researcher not comply with the conditions of approval.

We wish you success in your research.

Yours faithfully

Signed by Hospital/Site/Division Management

18/5/2012

Date

(Specify designation)

APPENDIX F – PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT:

Critical thinking: perspectives and experiences of critical care nurses.

REFERENCE NUMBER:

PRINCIPAL INVESTIGATOR: Lucia Elizabeth Hendricks

ADDRESS: 218 Raats Drive

Table View

7441

CONTACT NUMBER: 082 732 4161

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the researcher any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the **Health Research Ethics Committee (HREC) at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

- **What is this research study all about?**
  - *The study will be conducted at a private hospital in the Western Cape. Six Registered professional nurses working in an intensive care unit recruited for the study.*
  - *The aim of this study is to explore the critical care nurse's experiences and perspectives of applying critical thinking in clinical practice in order to support their delivery of quality nursing care.*
  - *The participants will be interviewed individually and then invited to participate in a focus group discussion at a later stage.*
- **Why have you been invited to participate?**
  - *You have been invited to participate because you are a registered professional nurse working in an intensive care unit at a private hospital in the Western Cape.*
- **What will your responsibilities be?**
  - *You will be requested to participate in the study after a full explanation is given of the study procedures.*

- **Will you benefit from taking part in this research?**
  - *Findings of the study will be presented to the personnel of the intensive care unit which participated in the study.*

- **Are there in risks involved in your taking part in this research?**
  - *There are no risks involved in taking part in this research. It is the researcher's responsibility to prevent confidential, identifying data collected during the study from being made available to other persons. The participants will be numbered in alphabetical order i.e. participant a – f to disguise their identity. The data obtained in the form of interviews will be kept locked in a safe and secure place at the researchers permanent place of residence for at least five years and then destroyed. Every effort will be made to ensure participants of anonymity, confidentiality and privacy.*

- **If you do not agree to take part, what alternatives do you have?**
  - *You may refuse to participate in the study or withdraw at any time without repercussions.*
-

Will you be paid to take part in this study and are there any costs involved?

No, you will not be paid to take part in the study.

Is there anything else that you should know or do?

- *The study involves an interview of approximately 45 minutes and a single focus group of approximately 60 minutes.*
- *The questions will be open-ended and based on experiences and perspectives of critical thinking in an intensive care environment.*
- *You can contact the **Health Research Ethics Committee** at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by your researcher.*
- *You will receive a copy of this information and consent form for your own records.*

Please indicate the activity you are prepared to be involved in by ticking the appropriate boxes:

Participants	*Individual interview*	*Audio tape of interview*	*Focus group discussion*	*Focus grp disc. audio taped*
1				
2				
3				
4				
5				
6				

Declaration by participant

By signing below, I …….…….. agree to take part in a research study entitled: Critical thinking in clinical critical care nursing: the perspectives and experiences of critical care nurses.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) .....…..…….. on (*date*) ……...…….. 2012.

....

Signature of participant **Signature of witness**

➢ Declaration by investigator

I, Lucia Hendricks declare that:

- I explained the information in this document to the participants.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did not use an interpreter.

Signed at (*place*) .....…..…….. on (*date*) ……...…….. 2012.

....

Signature of investigator **Signature of witness**

APPENDIX G – CONFIRMATION OF LANGUAGE CORRECTNESS

Jeanne Santovito Language Editing
24 Fuchsia Road
Wellway Park East
Durbanville
7550

22 August 2012

To Whom it May Concern

Dear Sir/ Madam

Language Editing Confirmation

This letter serves to confirm that I, Jeanne Santovito, the undersigned, have proof-read and edited the following document for language correctness. This was completed and returned to Lucia Hendricks on the 19th August 2012.

Dissertation: **Critical thinking in clinical critical care nursing: perspectives and experiences of critical care nurses.**

Author: **Lucia Elizabeth Hendricks.**

Yours faithfully

Jeanne Santovito
084-8822004
021-9751544
jeanneh@telkomsa.net

APPENDIX H – CONFIRMATION OF TECHNICAL EDITING

Lize Vorster Communication

To whom it may concern

This letter serves as confirmation that I, Lize Vorster, have performed the technical formatting of Lucia Elizabeth Hendricks's thesis which entails ensuring its compliance with the Stellenbosch University's technical requirements.

Yours sincerely

Lize Vorster

Vygie street 9, Welgevonden Estate, Stellenbosch, 7600 * e-mail: lizevorster@gmail.com * cell: 082 856 8221