INVESTIGATING ATTITUDES TOWARDS CARDIOPULMONARY RESUSCITATION AND CARDIOPULMONARY RESUSCITATION COMPETENCY OF NURSES AT A HOSPITAL FOR INTELLECTUALLY DISABLED PEOPLE IN THE WESTERN CAPE

Lulama Lolwana

Student number: 2928764

A mini-thesis submitted in fulfilment of the requirements for the degree of Magister Curations in the School of Nursing,

Faculty of Community and Health Sciences,

University of the Western Cape

Supervisor: Prof J Chipps

February 2020

INVESTIGATING ATTITUDES TOWARDS CARDIOPULMONARY RESUSCITATION AND CARDIOPULMONARY RESUSCITATION COMPETENCY OF NURSES AT A HOSPITAL FOR INTELLECTUALLY DISABLED PEOPLE IN THE WESTERN CAPE

Lulama Lolwana

Student number: 2928764

A mini-thesis submitted in fulfilment of the requirements for the degree of Magister Curations in the School of Nursing, Faculty of Community and Health Sciences, University of the Western Cape

Supervisor: Prof J Chipps

February 2020

Abstract

Background: Cardiopulmonary resuscitation (CPR) is a core emergency skill in which all nurses need to be proficient to save the lives of patients. It is important for nurses working in psychiatric hospitals to administer CPR correctly should the need arise. However, they rarely perform CPR as the patients they care for are generally not physical ill, unlike patients admitted in general hospitals. Given the paucity of literature on CPR in psychiatric hospitals, this study aimed at investigating the attitudes towards CPR and the CPR competency of nurses working at a hospital for intellectually disabled people in the Western Cape, South Africa.

Aim and objectives: The aim of this study is to investigate the attitudes towards CPR and the CPR competency of nurses at a hospital for intellectually disabled people in the Western Cape. The study had three objectives: (1) to determine the attitudes towards CPR of nurses working with patients with intellectual disability; (2) to determine the CPR competency of nurses working with patients with intellectual disability; and (3) to determine the factors that influence the CPR competence and attitudes of professional and enrolled nurses working with patients with intellectual disability.

Method: A descriptive, survey design, using an all-inclusive sampling technique was used to select 87 nurses employed at a psychiatric hospital for intellectually disabled people in the Western Cape. A 37-item structured questionnaire, the CPR competency survey, was developed by the researcher, based on the American Heart Association Basic Life Support (AHA BLS) course content. The questionnaire comprised four sections, namely demographic data, knowledge and skills of CPR, attitudes to CPR and factors about the practice of CPR. The data were analysed using the Statistical Package for the Social Sciences (SPSS) version

25. A score of 84%, benchmarked against the AHA BLS course, was used to define adequate competence in terms of knowledge and skills. Attitudes and factors were reported using frequencies and percentages.

Results: The findings indicated that nurses have poor CPR knowledge and skills. It is also highlighted that nurses lack confidence in performing CPR, indicating that lack of training and information on CPR plays a huge role.

Recommendations: Formal BLS and ACLS training, as well as regular in-service training are recommended for all the nurses in the institution. Furthermore, regular CPR training workshops and refresher courses should be organised for the nurses so that they do not forgot their skills and knowledge of CPR.

Keywords

Attitude

Cardiopulmonary resuscitation

Competency

Nurse

Intellectual disability

Abbreviations

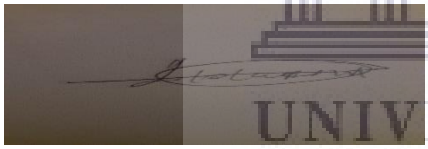
AHA	American Heart Association
APA	American Psychiatric Association
BLS	Basic Life Support
EN	Enrolled nurse
ENA	Enrolled nursing assistant
RN	Registered nurse
WHO	World Health Organization

Declaration

I declare that the study, '*Investigating attitudes towards cardiopulmonary resuscitation and cardiopulmonary resuscitation competency of nurses at a hospital for intellectually disabled people in the Western Cape'*, is my original work, that it has not been submitted for any degree or examination at any other university, and that all the sources I have used, or quoted, have been indicated and acknowledged by complete references.

Full name: Lulama Lolwana

Date: February 2020

Signed: 

Acknowledgements

I thank God for everything He has done for me. He gave me strength to overcome all sorts of obstacles that I faced during my studies; indeed, everything is possible with God.

I am grateful to my supervisor, Prof J Chipps, for her professional commitment, guidance, encouragement, insightful advice and comments throughout this research project. Your belief in me gave me the strength and confidence to continue working hard to complete the study.

My sincere gratitude goes to Dr P Martin for the final support, especially at the critical time of my study, for her guidance, support, encouragement, and for sacrificing her time. I am deeply indebted to you.

Thanks to Rita Oluwanifesimi, who sacrificed her precious time to assist me in understanding quantitative data analysis. You really opened my eyes.

Thanks to my colleague, Mr Tabani Noncungu, for support and guidance throughout this journey.

Thanks to my family for their understanding and continued support during the time of my studies, in particular, to my daughter, Lwandle, who in the future will understand why I was so busy all these years of my study.

Last, but not least, I would like to thank the management of the selected psychiatric hospital for allowing me to conduct this study at the hospital, as well as the respondents, former colleagues, the nursing staff of Alexandra Hospital, without whose support this study would not have been possible. I thank you all so very much.

Contents

List of annexures

List of tables

List of figures

CHAPTER 1: ORIENTATION OF THE STUDY

1.1 Introduction

Globally, cardiac arrest continues to be a major cause of premature death among populations (Tsegaye, Tesfaye & Alemu, 2015). It is thus imperative that nurses have knowledge and skills to render CPR promptly to ensure that patients have a chance of survival. In psychiatric settings, CPR is rarely performed as patients are generally not physically ill. However, nurses need to be knowledgeable and skilled in CPR should the need arise. There is a paucity of literature on the CPR competency, with respect to knowledge and skills, attitudes of nurses to CPR and factors that influence CPR competency and attitudes, of nurses working with intellectually disabled people in psychiatric hospitals hence the need to conduct this study.

1.2 Background

It is estimated that 10% of the world's population lives with a disability, just under a third of whom are living with intellectual disability. This represents approximately 200 million people living with intellectual disability (Ndengeyingoma & Ruel, 2016). Intellectual disability is the generalised disorder that involves impairments of mental abilities, which impacts intellectual functioning and adaptive behaviour, such as reasoning, learning and problem-solving skills (Keulen-de Vos & Frijters, 2016). It occurs in the developmental period of life (i.e., before the age of 18) and it is characterised by below average functioning. Most people with intellectual disability are born with the disability (International Disability Right Service, 2009). While intellectual disability has an estimated prevalence of between 2% and 3% in developed countries, a study in rural areas of South Africa found a prevalence rate of 3.6% (International Disability Right Service, 2009). No reliable data on the cause of intellectual disability in South Africa exists, though clinic-derived reports suggest that a number of causes of intellectual disability in South Africa have a similar prevalence to

developed countries (Adnams, 2010). In the Western Cape, foetal alcohol syndrome (FAS) is the most common cause of intellectual disability (Keulen-de Vos & Frijters, 2016).

There is an elevated mortality rate among people with psychiatric illnesses, even allowing for the effect of suicide (Abdelmawla & Mitchell, 2006). The standardised mortality ratio has been found to be 8.4 for people with severe intellectual disabilities in the United States and 4.9 for people with intellectual disabilities of all levels in Australia. Additionally, people with intellectual disabilities have higher levels of health needs than the general population (Cooper, Melville & Morrison, 2004).

People with intellectual disabilities face many challenges in important aspects of their lives that include daily functioning, physical health constraints, social isolation and limited financial resources. Patients with intellectual disability are also diagnosed with chronic diseases, such as epilepsy, diabetes and hypertension.

There is an expectation that nurses working in all health settings need to be competent in providing physical health care, including CPR. CPR is an emergency procedure consisting of external cardiac massage and artificial respiration, and it is the first treatment for a person who has collapsed with no pulse and has stopped breathing. It includes attempts to restore circulation of the blood and prevent death or brain damage due to lack of oxygen (American Heritage Dictionary, 2011; Al-Turki, Al-Fraih. Al-Rashoudi, Azzam & Otaibi, 2008). In children with epilepsy, up to 5.3 to 8.8 times increased risk of death has been reported in population-based cohort studies, and this is often attributed to lack of CPR or CPR not being performed properly (Grønborg & Uldal, 2014). It is also important for nurses who are working with patients with intellectual disability to be competent, that is, to have the

knowledge and skills to enable them to safely and effectively provide appropriate CPR measures in the event of cardiac arrest (Lyneham & Marzooq, 2009).

1.3 Problem statement

The World Health Organization (WHO, 2009) estimates that 17 million people died in 2008 from cardiopulmonary diseases. Early and effective CPR improves the chances of survival in cardiac arrest victims, but the knowledge and skills of health care providers vary. Survival after cardiopulmonary arrest is usually low and depends on early intervention, i.e. quality of CPR and time to defibrillation (Ilyas et al., 2014).

There is an elevated mortality rate in people with psychiatric illnesses, even allowing for the effect of suicide (Abdelmawla & Mitchell, 2006). There is an expectation that nurses working in all health settings need to be competent in CPR skills. It is very important for nurses who are working with patients with intellectual disability to be competent in CPR to enable them to safely and effectively provide appropriate CPR measures (Lyneham & Marzooq, 2009).

The researcher has observed that nurses working with mental health care users (MHCUs) diagnosed with intellectual disability are not properly equipped with skills and knowledge of CPR. Regardless of the training they receive, they may not use the skills regularly when working with intellectually disabled people, compared to nurses working in general hospitals where emergency situations frequently occur. The lack of knowledge and skills is a problem because, when faced with emergency situations, nurses working in mental health institutions struggle to perform CPR correctly. There are several studies that suggest that CPR knowledge is poorly recalled by nurses (Lyneham & Marzooq, 2009). There is a paucity of literature on

CPR competency in psychiatric nurses and nurses working in hospitals where intellectually disabled persons are cared for. No such studies were located in South Africa.

1.4 Research question

What are the attitudes towards cardiopulmonary resuscitation and the cardiopulmonary resuscitation competency of nurses at a hospital for intellectually disabled people in the Western Cape?

1.5 Aim of the study

The aim of this study is to investigate the attitudes towards cardiopulmonary resuscitation and cardiopulmonary resuscitation competency of nurses at a hospital for intellectually disabled people in the Western Cape.

1.6 Objectives

The objectives of this study were:

- to determine the cardiopulmonary resuscitation competency of nurses working with patients with intellectual disability;
- to determine the attitudes towards cardiopulmonary resuscitation of nurses working with patients with intellectual disability; and
- to determine the factors that influence cardiopulmonary resuscitation competency and attitudes of professional and enrolled nurses working with patients with intellectual disability.

1.7 Significance of the study

Nurses and other health workers who are usually involved in nursing patients with intellectual disabilities should have regular certified training and re-training in basic CPR at least every two years (Olateju & Amoran, 2014). This study may provide useful information to educators planning training in CPR at the hospital, which may impact on the competency of nurses in intellectually disabled services in providing cardiopulmonary resuscitation. Having this baseline information will improve the competence of nursing staff in CPR in these settings. Information from this study will be disseminated to the CEO and the training officer at the selected hospital to ensure that the CPR competency of staff is maintained.

1.8 Definitions of key concepts

Attitude is the propensity to negatively or positively respond to ideas, situations, objects, or events (McLeod, 2014).

Operational definition: Attitudes in this study are feelings towards CPR, which are measured by self-rated questions (items 26 to 30) on confidence or fears about conducting CPR.

Cardiopulmonary resuscitation (CPR) is an emergency procedure consisting of external cardiac massage and artificial respiration; the first treatment for a person who has collapsed with no pulse and has stopped breathing; and attempts to restore circulation of the blood and prevent death or brain damage due to lack of oxygen (American Heritage Dictionary, 2011).

Operational definition: CPR is the emergency procedure used by nurses on intellectually disabled people who have collapsed with no pulse and have stopped breathing.

CPR competency is defined as possessing cognitive knowledge and psychomotor skills to be able to perform CPR in a cardiac arrest situation based on the AHA BLS course.

Operational definition: Competency in this study is measured by self-rated questions (items 6 to 25) on knowledge and skills in conducting CPR, which are in turn defined as follows:

Knowledge is the information and knowledge acquired through experience or education (Concise Oxford Dictionary, 2005). In this study, knowledge refers to nurses' theoretical understanding of CPR. S*kill* is the ability to perform something well (Concise Oxford Dictionary, 2005). In this study, it is the skills nurses use to perform CPR correctly for example chest compressions, breaths, clearing of airways.

Intellectual disability is a condition in individuals with concurrent impairments in adaptive behaviour, manifested during the development period (Capri & Swartz, 2018).

Operational definition: In this study, intellectual disability refers to the condition suffered by patients who are cared for by nurses at the selected psychiatric hospital and who may or may not receive stimulation activities.

A **hospital for persons with intellectual disability** is a hospital that offers care, treatment and rehabilitation to MHCUs with intellectual disability (South Africa, 2002).

Operational definition: In this study, it refers to a specific hospital that provides mental health services for people with intellectual disabilities, as well as the research setting of this research study.

Nurses are defined as persons who work in a psychiatric hospital, and who are trained to care for people with intellectual disability Concise Oxford Dictionary (2005).

Operational definition: In this study, the term refers to professional registered nurses (RNs), enrolled nurses (ENs) and enrolled nursing assistants (ENAs) who render direct care to people with intellectual disability in a psychiatric hospital in the Western Cape.

1.9 Research design and methodology

A quantitative approach using a descriptive, survey design was used to achieve the aim of this study. A detailed description of the methodology used in this study is provided in Chapter 3.

1.10 Data analysis

The SPSS version 25 was used in the analysis of the data, with the assistance of a statistician. Descriptive statistics were calculated and presented in percentages. A detailed description of the data analysis process is provided in Chapter 3.

1.11 Chapter outline

This introductory chapter provides a background for this study. In addition, it presents the problem statement, research question, aim, objectives, significance and the definition of key concepts used in the study. A brief overview of the research methodology was provided.

The rest of the thesis will be presented as follows:

Chapter 2: The literature review focuses on studies on the attitudes and competencies of nurses on cardiopulmonary resuscitation. Given the paucity of studies on nurses working with people with intellectual disability, studies focusing on nurses working in psychiatric hospitals will also be included, given that psychiatric hospitals may have people with intellectual disability admitted to them.

Chapter 3: A detailed explanation of the research design and methodology used in this study is given.

Chapter 4: The results obtained from the data analysis are presented in tables and graphs.

Chapter 5: The results are interpreted and discussed within the body of empirical literature on competencies in cardiopulmonary resuscitation among nurses working in hospitals for intellectual disability.

Chapter 6: The study is concluded by reflecting on its research objectives and aim, and considering the findings in Chapter 4. The limitations of the study are identified, as are possible areas for further research.

1.12 Summary

This chapter provided an introduction and overview of the study, focusing on its background, problem statement, research question, aim, objectives, significance and definitions of key concepts.

In the following chapter, Chapter 2, a literature review is presented on the competency and attitudes regarding CPR among nurses working in psychiatric hospitals.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter will discuss the literature review undertaken to locate studies on attitudes and competencies of nurses regarding CPR on intellectually disabled patients. Factors that influence the nurses' knowledge, skills and attitude regarding CPR will also be described. Literature review involves finding, reading, understanding, and forming conclusions about the published research and theory, as well as presenting it in an organised manner (Brink, Van der Walt & Van Rensburg, 2012). data base used as well as the search words will provide evidence of how the literature was searched.

2.2 CPR competency in psychiatry nurses

CPR has been identified as a core emergency skill in which all health care professionals should be proficient (Kipsang & Bruce, 2011). Nurses, by the very nature of their work, are often the first to initiate CPR when an emergency occurs. As the role of the nurse continues to expand, the boundaries between what are considered to be nursing interventions and medical care become less obvious (Terzi, 2012). Terzi (2012) further explains that with an expanded role comes more responsibilities that require nurses to have a high standard of knowledge and skills, specifically in CPR. CPR competency is defined as having the cognitive knowledge and psychomotor skills necessary for the effective performance of CPR in cardiac arrest situations (Rajeswaran & Ehlers, 2014).

Patients with intellectual disabilities experience health inequalities compared with the general population, and although their life expectancy is increasing, it remains much lower than for the rest of the population (Cooper et al., 2004). Thus, nurses working with intellectually

disabled patients are required to learn CPR correctly through systematic training to save patients' lives (Ilyas et al., 2014).

Nurses should thus be competent and skilled CPR providers to enhance the survival rates of cardiac arrest patients. Ilyas et al. (2014) further suggest that CPR training should be provided every three to six months to prevent deterioration of CPR skills and knowledge. Although nurses take part in training programmes during their career, very few refresh and update their knowledge and skills on the subject (Plagisou et al., 2015). According to Nori, Saghafinia, Motamedi and Hosseini (2012), participation in training courses once every six months contributes to retention of both theoretical knowledge and performance skills. The aim of the training is to ensure that nurses not only acquire CPR knowledge and skills, but that they also retain this knowledge to be able to respond competently and confidently to a life threatening cardiac arrest situation.

2.3 Knowledge and skills of nurses regarding CPR

Rajeswaran and Ehlers (2014) conducted a study using a pre-test, intervention and re-test time-series design on 102 nurses from the two referral hospitals in Botswana. A multiple-choice questionnaire and checklist were used to test respondent's knowledge and skills. The aim of the study was to evaluate registered nurses' levels of CPR knowledge and skills. Findings revealed that nurses performed poorly on CPR skills pre-test, with no respondent passing the test. They performed poorly in terms of the speed of breaths, the ventilation volume, the correct hand position and the appropriate rate of chest compressions. Whilst the CPR skills of the nurses improved by 67.8% after CPR training, these skills deteriorated significantly during the 12 weeks after the training (Rajeswaran & Ehlers, 2014). This deterioration of CPR knowledge and skills is also seen in a study conducted by Sankar et al.

(2013), which found that the knowledge and skills of in-service and pre-service nurses posted in acute care areas seemed to improve following training in paediatric CPR following training. However, by six weeks after the training, the knowledge and skills had started to decline, although they continued to remain significantly higher than their initial values.

In Nigeria, researchers Olateju and Amoran (2014) conducted a descriptive survey on knowledge of, and attitudes towards basic CPR among community nurses in the Ogun State. A total of 70 nurses completed a questionnaire on knowledge and attitudes regarding CPR. The findings revealed that knowledge of CPR was poor among health professionals. Lack of knowledge and inability to perform CPR can lead to loss of lives. The study reported no significant differences among nursing categories, units and years of experiences.

Munezero, Atuhaire, Groves and Cumber (2018) conducted a study using a prospective pre/post intervention design (experimental) on 32 nurses in a hospital in Uganda using two tools. Tool I consisted of a 17-item of multiple-choice questionnaire that assessed CPR knowledge, and Tool II involved a 15-point observation checklist of skills questions. A penalty score of 5, 10 or 20 was set for each question, based on the guideline. The aim of the study was to assess nurses' knowledge and skills following CPR training. This study indicated that nurses in the selected hospital in Uganda had low competencies in CPR knowledge and skills at pre-test assessment (Munezero et al., 2018). This reduces nurses' initiation and performance of CPR. CPR skills and knowledge are vital to effective CPR interventions to save patients' lives. Differences were found in the pre-test scores of respondents when categorised by working experience. Respondents with more experience had higher scores on knowledge and skills, and there was no statistically significant effect of qualification levels on scores of either knowledge or skills at pre-test and post-test (Munezero

et al., 2018). The researcher concluded that for effective CPR, regular training needs to be instituted to ensure continuous training and practice for nurses to acquire competency and maintain the knowledge and skills. A study conducted by Kalhori et al. (2017) on the CPR knowledge of Iranian nurses and emergency medical personnel found that knowledge of CPR was within an acceptable range. These authors concluded that nurses and emergency personnel need CPR training according to the most recent CPR guidelines. In addition, CPR training should be a mandatory component of all health-associated fields such as medical, paramedical and nursing colleges and faculties.

2.4 Attitude of nurses towards performing CPR

Studies (Hung et al., 2017; Al-Turki et al., 2008) report a positive attitude towards CPR. A cross-sectional survey with convenience sampling of 351 college students was conducted by Hung et al. (2017). The aim of the study was to investigate college students' knowledge and attitudes towards bystander CPR. Most of the students showed positive attitudes towards performing CPR in a cardiac arrest situation, with high attitude scores (between 24 and 30). Al-Turki et al. (2008) reported that the overall attitude towards CPR among the university students in Riyadh, Saudi Arabia was positive. Similarly, a study conducted by Tsegaye et al. (2015) found that the majority of participants had a positive attitude towards CPR. Having a positive attitude was deemed insufficient, as CPR is a life-saving measure in which all health care personnel had to be proficient, so training is a significant factor in facilitating students' initiation of CPR. The results show that respondents who had been trained in CPR had better attitudes and confidence in performing CPR.

The available literature on nurses' initiation of CPR cites lack of competence and skill retention, lack of self-confidence, attitudes and beliefs surrounding the role of nurses in the

deployment of CPR, as well as previous experience, as possible factors influencing the trend of nurses hesitating to initiate in-hospital CPR (Hebert, 2017). Herbert (2017) reported that 61.2% of nurses felt confident following CPR education, but that these professionals hesitated to initiate CPR and defibrillation owing to a fear of harming the patient. Furthermore, they were hesitant to initiate CPR and defibrillation owing to the worry that they would feel guilty if their patient died. A lack of confidence pertains to nurses hesitating to initiate CPR procedures because they do not believe they have the competence to carry out the necessary related processes or they do not feel comfortable performing CPR (Hebert, 2017). Lack of confidence, and fear of disease transmission and legal disputes were the main reasons for being unwilling to perform CPR (Hung et al., 2017).

Most studies reported that health care workers or student nurses are willing to perform CPR despite the barriers they face in initiating it. In a study conducted by Kanstad, Nilsen and Fredriksen (2011) among Norwegian secondary students, the aim was to investigate nurses' attitudes towards performing CPR. The study reported a high degree of willingness to perform CPR, even though respondents were reluctant to perform rescue breathing on a child. For this reason, firm reassurance about the negligible risk of disease transmission in mouth-to-mouth ventilation must still be emphasised during BLS training. This is similar to a study done by Tsegaye et al. (2015) on reluctance of professional health care workers to provide mouth-to-mouth without the appropriate means. Their reluctance was due to their anxiety regarding being exposed to illnesses from the victim. Willingness to perform CPR may be facilitated by education.

2.5 Factors that influence nurses' performance of CPR

Several studies have identified lack of training as the major barrier in initiating CPR. A lack of competence and skills retention, as well as regular training are well-documented barriers that constrain nurses and other health care professionals in their ability to perform adequate resuscitation (Hebert, 2017). A total of 235 students, in a study done by Tsegaye et al. (2015), the authors' state that nearly 100% of medical practitioners cited lack of training as a major factor affecting the practice of CPR, followed by poor exposure (93.56%). A majority (84%) of the respondents alluded to lack of confidence as a factor affecting the practice of CPR. Kozamani, Kapadochos and Kadda (2012) alluded to fear of being exposed to a contagious illness as a concerning factor that influenced the attitudes of nursing staff in performing CPR. The number of times that they had been trained in CPR increased their confidence in applying CPR. The respondents in the study asserted that CPR training needed to be more systematic. Repeating training helps staff retain knowledge in CPR (Kozamani et al., 2012).

2.6 Summary

In this chapter, the literature review focused on empirical literature on attitudes and competencies regarding CPR of nurses working within a health care setting. The literature confirmed that nurses need to maintain competency in CPR, and nurses were encouraged to be willing to initiate CPR. This chapter also highlighted the attitudes and factors that may lead nurses not to initiate CPR.

In Chapter 3, the research design and the research methods used to achieve the aim of the study will be discussed.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology that was used to achieve the aim of the study. It focuses on the research setting, research design, population and sample of the study, data collection instrument, validity and reliability of the instrument, data collection process, data analysis and ethics considerations. Research methods are the techniques used by researchers to structure a study and to gather and analyse information relevant to the research question (Polit & Beck, 2012:31). A quantitative research approach was employed to investigate the attitudes towards CPR and the CPR competency of nurses working at a hospital for intellectually disabled people in the Western Cape.

3.2 Research setting

Setting refers to a circumstance in which data collection occurs in a study (Polit & Beck, 2012). The research study was conducted in a selected psychiatric hospital in the Western Cape province of South Africa. The Western Cape is the fourth-largest province in South Africa. It occupies about 10% of South Africa's total area and has an estimated population of 6.2 million people (Statistics South Africa, 2015). Geographically, the province is located at the southern end of Africa, with the Indian Ocean on the east coast and the Atlantic Oceans on west coast (see Figure 3.1). Demographic distribution indicates that the Western Cape's population is comprised of more than 50% coloured people (mixed race), 30% black, and the rest white and Indian.

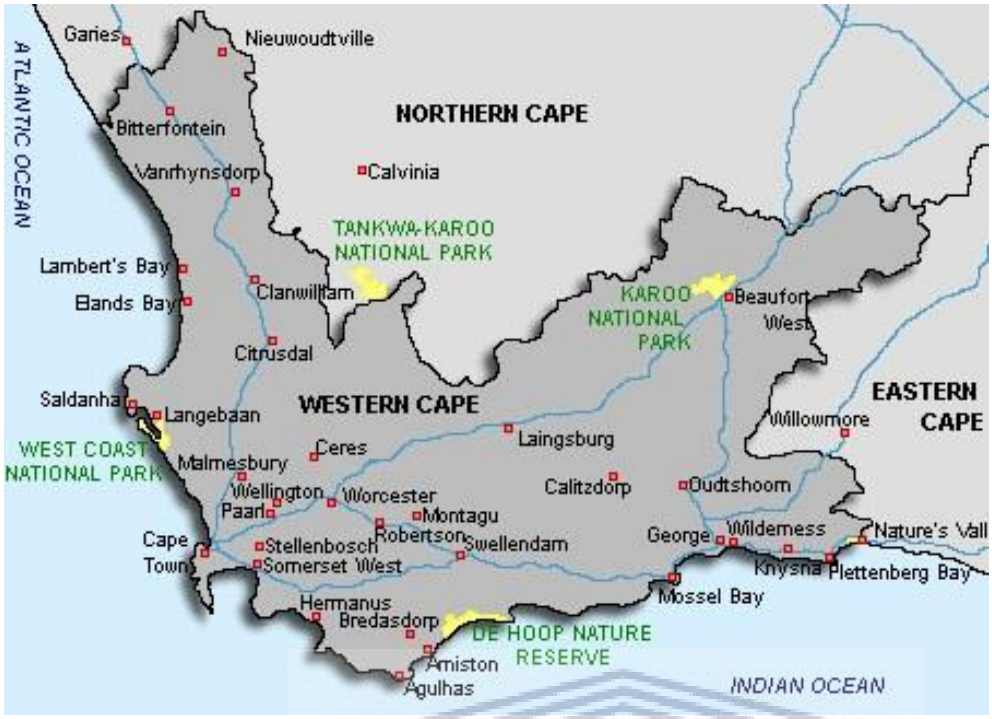


Figure 3.1: Map of Western Cape Province health districts

Source: http://www.aboutsouthafrica.com/western_cape_map.jpg

There are four large psychiatric hospitals that provide different services for the various mental health care needs of the province. The study took place at a 320-bed psychiatric hospital for adults with intellectual disability situated in Maitland, only institution specialises in intellectually disable patients amongst the four, Western Cape. The hospital offers services for in- and outpatients with intellectual disability. There are 13 wards, most of which offer long-term care for patients who are frail, diagnosed with autism, chronic medical conditions or challenging behaviour. There are also two admission wards one for women and one for men and an emergency ward which serves as a clinic. There are 137 nursing staff caring for patients with intellectual disabilities.

3.3 Research approach

According to Grove, Burns and Gray (2013:23), quantitative research is defined as a 'formal, objective, systematic process implemented to obtain numerical data for understanding aspects of the world'. It is used to describe variables, examine relationships among variables and determine cause and effect interaction between variables. A quantitative research approach was selected because the study aimed at investigating attitudes towards CPR and the CPR competency of nurses at a hospital for intellectually disabled people in the Western Cape.

3.4 Research design

A research design is defined by Grove et al. (2013:214) as a 'blueprint for conducting a study that maximizes control over factors that could interfere with the validity of the findings'. According to Polit and Beck (2012), the research design of a study spells out the basic strategies that researchers adopt to develop evidence that is accurate and interpretable. The research design incorporates some of the most important methodological decisions that researchers make, particularly in quantitative studies. Thus, it is important to understand design options when embarking on a research project.

A quantitative, descriptive survey design was used to achieve the aim of the study. Descriptive designs are used in studies where more information is required in a particular field through the description of a phenomenon as it occurs naturally (Brink et al., 2012). This design was deemed relevant as the researcher wanted to investigate nurses' attitudes towards CPR, their CPR competency and the factors regarding CPR practice among nurses working at a hospital for intellectually disabled people in the Western Cape.

3.5 Population and sampling

In this section, the population, sampling technique and sample size, as well as the inclusion and exclusion criteria are discussed.

3.5.1 Study population

The term population is defined as 'the entire group of objects or persons that is of interest to the researcher' (Brink et al., 2012:131). The population for the study was all the professional nurses employed at the selected hospital. The target population consisted of the 137 nurses working at the above facility.

3.5.2 Sampling technique and sample size

Sampling refers to the researcher's process of selecting the sample from a population in order to obtain information regarding a phenomenon in a way that represents the population of interest (Brink et al., 2012). The sample for the study was all-inclusive, meaning that all nurses working in the selected hospital were included in the study. A sample is a subset of a population element (Polit & Beck, 2012:307). Furthermore, in nursing research, the elements (basic units) are usually humans. Researchers work with samples rather than with populations because it is more economical and practical to do so. The researcher distributed questionnaires to 87 participants with a response rate of 93% (n=81). The response rate was reduced by five questionnaires that were incomplete and discarded, yielding a response rate of 87% (n=76).

3.5.3 Inclusion criteria

Inclusion criteria are the requirements, set by the researcher, which prospective subjects have to meet in order to be included in the sample (Grove et al., 2013). The inclusion criteria for this study were:

- all the nurses who were permanently employed at that selected psychiatric hospital; RN's, EN, s and ENA's
- Community Service Professional Nurse working at the selected psychiatric hospital.
- nurses working on day or night shift during the data collection period; and
- Willingness to participate in the study.

3.5.4 Exclusion criteria

Exclusion criteria are requirements, set by the researcher, which exclude subjects from being participating in the sample (Grove et al., 2013). The exclusion criteria for this study were:

- the director of nursing, area managers, operational managers, occupational health, social workers and psychologists, since they are not involved in daily care of the patients;
- staff on annual leave, sick leave, or study leave; and
- staff not willing to participate.

3.6 Data collection

Data collection is defined as the gathering of information to address a research problem (Grove et al., 2013). The data collection instrument, data collection process, validity and reliability of the study are discussed in this section.

3.6.1 Data collection instrument

A data collection instrument is a tool used to gather information in a research study (Brink et al., 2012). A structured questionnaire was used to collect data. Structured questionnaires are defined as questionnaires with rigid responses, one of which a respondent has to select from the list of options provided. Structured questionnaires contain closed-ended questions, defined as questions that provide all the answers required, for the respondents to select (Brink et al., 2012).

Because there was no validated questionnaire to determine nurses' competency and attitudes regarding CPR, or factors about the practice of CPR, the researcher developed a self-administered, closed-ended questionnaire based on the course content of the American Heart Association (AHA) Basic Life Support (BLS) course. The developed questionnaire, namely the CPR Competency Survey, is a 37-item questionnaire (ANNEXURE E) comprising four sections.

Section A: Five-item demographic data tool on age, gender, unit/ward where the respondent is working, nursing category and years of work experience.

Section B: Competency in CPR was measured using 20 items, of which 19 were multiple-choice knowledge and skills questions and one required a true or false response on CPR. As CPR skills and knowledge are standard, most questions focused on general CPR knowledge and skills. Respondents were requested to identify the correct answer.

Section C: Attitudes to CPR was measured using six five-point Likert-type questions ranging from 'definitely' to 'do not know'.

Section D: Factors about the practice of CPR contained six items depicting the factors. Respondents were required to answer yes/no to these items.

Scoring of the competency items was benchmarked against the AHA BLS course. The minimum score of 84% was used to define adequate competence, based on the AHA BLS course

3.6.2 Validity

Validity is the ability of an instrument to measure the variable that it is intended to measure. (Brink et al., 2012).

Face validity was ensured by logically linking items of the instrument with the objectives of this study (see Table 3. 1). Content validity entails examining questions of a research instrument to establish the extent of coverage of areas under study (Kumar, 2011). Content validity was established by the questionnaire being based on the AHA BLS course.

Table 3.1: Validity of the instrument

Objectives	**Item**
1. To determine the CPR competence and knowledge of nurses working with patients with intellectual disability.	Knowledge scale: Item 6–item 25
2. To determine the attitudes of nurses working with patients with intellectual disability towards performing CPR.	Attitude scale: Item 26–item 31
3. To determine the factors that influence the CPR knowledge, skills and attitudes of psychiatric nurses	Factors scale: Item 32–item 37

working with patients with intellectual disability.	

3.6.3 Reliability

Reliability is the consistency and dependability of a research instrument in measuring a variable. Types of reliability are stability, equivalence and internal consistency (Brink et al., 2012).

A pre-test of 10 nurses was conducted to test the reliability of the questionnaire.

3.6.4 Data collection process

The data collection process is the formal procedure researchers develop to guide the collection of data in a standardised fashion (Grove et al., 2013).

Data were collected after obtaining ethics approval from the Biomedical Science Research Ethics Committee of the University of the Western Cape (UWC). Permission to conduct the study at the selected psychiatric hospital was obtained from the Western Cape Department of Health Research Ethics Committee (ANNEXURE A). The researcher sought permission to access the staff and use one of the private rooms in the ward for completion of the questionnaires. Appointments were made with the managing nurses of each ward, each of whom was provided with information about the study. The researcher then went to each ward, introduced himself and explained the study to the nursing staff. Questionnaires were distributed to the participants (RN's, EN's and ENA's) and collected by the researcher. The following aspects of the study were explained: title, purpose, potential benefits, risks, time commitment, procedure, anonymity, confidentiality, voluntary consent, option to withdraw, board or committee approval and how to complete the questionnaire. The nurses were given an opportunity to ask questions and decide whether to participate in the study or not. Nurses who had volunteered to participate were given an information sheet, consent forms and

questionnaires. These forms were left with the respondents and collected a week later after completion. This process was done with both day and night shift workers in their respective working times.

3.7 Data analysis

Data analysis is the systematic organisation and synthesis of research data, as well as the testing of hypotheses in quantitative studies, using this data (Polit & Beck, 2012).

Data were analysed using the SPSS version 25. The analysis of the data elicited a CPR competence score by marking the questions as correct or incorrect. Attitudes and factors were reported using frequencies and percentages.

3.8 Ethics

Ethics clearance to conduct this study was obtained from the Biomedical Science Research Ethics Committees of UWC (Annexure A). Permission to conduct this study was obtained from the Western Cape Department of Health (Annexure B). Permission to access the staff in the selected hospital wards was obtained from the operational managers telephonically following the email that were sent to the managers. The ethical principles adhered to in this study are discussed in this section.

3.8.1. Principle of respect for persons

The respondents have the right to voluntarily decide to participate in the study or not. All respondents were asked to sign a consent form before the study. They have the right to decide whether to participate, without risk of penalty or prejudicial treatment. They may withdraw at any time, and participation must be voluntary. All potential respondents were handed

information sheets, and the researcher explained the study to them and afforded them the opportunity to ask questions for clarity. The selection of respondents was fair as all the nurses (registered, enrolled, enrolled nursing assistants) were invited to participate. Respondents were treated fairly irrespective of gender, race or ethnicity as they were all afforded the opportunity to participate in the study. Respondents' information was anonymous and confidential as they were not required to include their name or add any identifying data on the questionnaire.

3.8.2. Principle of beneficence

Respondents were protected from discomfort or harm by ensuring that no physical, psychological, emotional, spiritual, economic, social, or legal harm was inflicted on them during the process of data collection, although all research carries risks which may be minimal. The researcher arranged that respondents would receive sessions with the Independent Counselling and Advisory Service (ICAS), a free counselling service for all government employees, in the event that any of them reported feeling traumatised during data collection. No respondent reported trauma. The name of the hospital was not identified in the study to avoid causing harm to the reputation or image of the hospital (Brink et al., 2012).

3.8.3. Principle of justice

The principle of justice aims to ensure that the participants' rights to fair selection and treatment, privacy, and anonymity and confidentiality are protected (Brink et al., 2012). The participants' right to fair treatment was ensured as all participants were selected in accordance with the methodology and aim of the study, ensuring that participants were selected equally. Participants did not receive any benefit from participating in the study and no benefits were withheld from nurses who did not participate. Furthermore, participants

were treated with respect, as the researcher respected their time and availability and did not keep them for longer than needed. In addition, the participants were thanked for their willingness to participate in the study. The participants' right to privacy was protected as no data were collected without the participants' knowledge or permission, and the data were not used for any purpose other than what was explained to the participants, to which they voluntarily consented. The data collected were only shared and discussed with the research supervisor and statistician, as they were directly involved in the study. The participants' right to confidentiality and anonymity was ensured as participants were not expected to, and were informed that they should not, provide their name on the questionnaire; thus, the identities of the participants are protected and there is no way of linking their questionnaire to their consent form, as these was collected separately and placed in separate boxes during data collection. Furthermore, each participant was identified with a number during data analysis. Questionnaires will be kept in a locked drawer for a period of five years, after which they will be discarded by means of shredding. Electronic data will be stored on the university server in a password-protected file, as well as on a USB drive. Data stored on the USB drive will be encrypted to prevent information from being shared during data transfer. The USB drive will be locked with paper data in a filing cabinet. The data are the property of the university and will only be disseminated should the research be used for a paper publication.

3.9 Summary

In this chapter, the research design and research methodology used to achieve the aim of the study was discussed. The setting, namely a psychiatric hospital for intellectually disabled people, was described. The study population, sampling and the data collection instrument were described. Validity and reliability of the data collection instrument were discussed. The data collection process, data analysis as well as the ethics of the study were described.

Chapter 4 comprises the results of the study.

CHAPTER 4: RESULTS OF THE STUDY

4.1 Introduction

In this chapter, the findings of the study are presented. The aim of the study was to investigate the CPR competency, attitudes towards CPR and the factors influencing CPR practices of nurses working at a hospital for intellectually disabled people in the Western Cape. The results are based on a sample of 76 nurses (the respondents) who participated in a self-administered survey. The data are presented as follows:

Section A: Sample realisation, i.e. The response rate and the demographic data of the respondents;

Section B: CPR competency of nurses, a description of nurses' knowledge and skills of CPR;

Section C: Nurses attitudes towards CPR; and

Section D: Factors influencing the practice of CPR.

4.2 Section A: Sample realisation

Out of a total number of 137 nurses who were invited to participate in the study, 87 agreed to complete the questionnaire (63.5%). A total of 87 questionnaires were handed out to the respondents. A total of 81 questionnaires were completed, yielding a response rate of 93%. Five of these questionnaires were incomplete and were discarded, resulting in 76 completed questionnaires being analysed. The final response rate was 87% (n=76/81).

4.2.1 Demographics of the respondents (N=76)

The sample consisted of 31 RNs (41%), 32 ENAs (42%) and 13 ENs (17%). Most of the respondents were female (86%, n=65) with only 11 (14.5%) males. For the overall sample, the mean age was 40 years (SD=10.701). There was a significant difference in age among the

qualification categories of respondents, with EN respondents reporting a mean age of 47 years (SD=8.291), followed ENAs with a mean age of 43 years (SD=9.246), and RNs being the youngest at 34 years (SD=9.827), X^2=12.70, P=<0.001. 33.81(SD=9.827) (X^2=12.700, p=<.001) (Table 4.1).

Table 4.1: Sample demographics

Demographic variables	**RN**	**EN**	**ENA**	**Total**	**Test X^2=**	**p-value**
Gender n (%)	31 (41%)	13 (17%)	32 (42%)	76 (100%)	2.101	.717
Male	5 (16.1%)	1 (7.7%)	5 (15.6%)	11 (14.5%)		
Female	26 (83.8%)	12 (92.3%)	27 (84.4%)	65 (85.5%)		
Age m (sd)	33.8 (SD=9.8)	47.0 (SD=8.2)	43.4 (SD=9.2)	40.1 (SD=10.7)	12.700	<.001
Unit	31	13	32	76	5.368	.498
Acute	11 (35.5 %)	3 (23.1%)	5 (15.6%)	19 (25.0%)		
Long-term	9 (29.0%)	3 (23.1%)	12 (37.5%)	24 (31.6%)		
Frail care	7 (22.6%)	6 (46.2%)	10 (31.3%)	23 (30.3%)		
Forensic	4 (12.9%)	1 (7.7%)	5 (15.6%)	10 (13.2%)		
Years of experience m (sd)	7.55 (SD=9.4)	20.62 (SD=10.9)	15.12 (SD=11.4)	12.97 (SD=11.5)	8.157	.001

Chi-square Test. *Significant at P<.05

Although the overall mean number of years of experience reported was 13 years (sd=11.525), differences were found in years of experience between the categories of staff, with EN respondents reporting more years of working experience (21 years, SD=10.905), compared to nurses ENAs with 15 years (SD=11.443) and RNs with 8 years (SD=9.409). (X^2=8.157, p=.001). Slightly less than a third of the respondents worked in long-term units (24, 32%), as was the case in the frail care units (23, 30%). A quarter of the respondents worked in the forensic care unit.

4.3 Section B: Competency in CPR

Respondents' competency in CPR was determined by assessing their knowledge and skills using 20 multiple-choice questions with a total score of 20. The results are presented below

as follows: respondents' mean knowledge score; respondents' knowledge scores of different nursing categories; respondents' knowledge scores associated to the units where they work; and knowledge scores associated with years of experience.

Respondents' overall knowledge score for CPR was 12/20 (SD=3.1) (60%), with the lowest score being 4/20 (20%) and the highest score being 18/20 (90%) (Table 4.2).

Table 4.2: Respondents' mean knowledge score

	N	Minimum	Maximum	Mean	Std. deviation
Knowledge	76	4/20 (20%)	18/20 (90%)	12.04 (60%)	3.074

Knowledge scores were not consistent over different nursing categories (see Table 4.3). There were significant differences in the knowledge scores between respondents in different nursing categories, with RNs scoring higher than ENs, who in turn scored higher than ENAs (13.0 vs 12.5 vs 11.0, *F*=3.7, p=.029) (see Table 4.3).

Table 4.3: Total knowledge score of different nursing categories

Nursing category	RN (n=31)	EN (n=13)	ENA (n=32)	Total (N=76)	F	sig
Knowledge/20 (mean score (mean %)	13/20 (65%)	12.5/20 63%	11/20 55%	12 60%	3.7	.029

However, there were no significant differences in knowledge score per type of unit (Table 4.4).

Table 4.4: Knowledge score per unit

UNIT	Acute (n=19)	Frail (n=23)	Forensic (n=10)	Long-term (n=24)	Total (N=76)	F	Sig
Knowledge/20	12.6 (SD=-2.4)	12.1 (SD=-3.4)	11.8 (SD=-2.5)	11.6 (SD=-3.5)	12.0 (SD=-3.1)	0.428	.734

When considering knowledge by years of experience, the average knowledge score was 12.97/20 (SD=11.53), and although respondents with less than 20 years of experience had higher average scores, this difference was not significant (12.3/20, 61.5%) compared to respondents with more than 20 years of experience (11.5/20, 57.5%) (Table 4.5).

Table 4.5: Knowledge by years of experience

Years of experience	Less than 20 years (n=50)	More than 20 years (n=26)	Total (n=76)	F	Sig
Knowledge/20	12.3 (SD=-2.9)	11.5 (SD=3.4)	12.4 (SD=3.1)	1.328	.253

4.3.1 Knowledge of different component of CPR

The respondents were asked to complete knowledge questions relating to their CPR knowledge and skills. Most of the respondents knew the correct answers to the questions: *Which manoeuvre can be used to open the airway?* (n=74, f=97.4%), *Pulse check is an essential initial step before CPR* (71, 94.7%) and *What is the first drug of choice given during cardiac arrest?* (68, 89.5%). Less than a third of the respondents knew the answers to the following questions: *What is the recommended depth of chest compression?* (20, 26.3%), *what medication and in what dosage is it recommended to treat a patient with persistent ventricular fibrillation?* (22, 28.9%) and *How often should the emergency trolley be checked in the ward?* (23, 30.3%) (Table 4.6).

Table 4.6: Individual item knowledge scores per nursing category

Items	RN (n=31)	EN (n=13)	ENA (n=32)	Total (n=76)	F Test=	p-value
Which manoeuvre can be used to open the air way?	31(100%)	12 (92.3%)	31 (96.9%)	74 (97.4%)	2.168	.338
Pulse check is an essential initial step before CPR.	30 (96.8%)	13 (100%)	28 (90.3%)	71 (94.7%)	2.164	.339
What is the first drug of choice given during cardiac arrest?	28 (90.3%)	12 (92.3%)	28 (87.5%)	68 (89.5%)	0.267	.875
When assessing the unconscious patient for pulselessness, which of the following is the best artery to check?	28 (90.3%)	11 (84.6%)	27 (84.4%)	66 (86.8%)	2.810	0.590
Which one of the following describes the best way to give mouth-to-mouth ventilation after the nurse open the airway and pinch the nose of an unresponsive adult?	27 (87.1%)	11 (84.6%)	26 (81.3%)	64 (84.2%)	0.407	0.816
What is the compression/ ventilation ratio for a single rescuer?	25 (80.6%)	10 (76.9%)	28 (87.9%)	63 (82.9%)	0.916	0.632
What is the recommended way to determine the location point for chest compressions?	24 (77.4%)	11 (84.6%)	19 (59.4%)	54 (71.1%)	3.895	0.143
What is the benefit of minimising interruptions of chest compressions during CPR?	21 (67.7%)	9 (69.2%)	22 (68.8%)	52 (68.4%)	0.012	0.994
What are the minimum time interruptions the nurse should observe during CPR?	20 (64.5%)	9 (69.2%)	20 (62.5%)	49 (64.5%)	0.183	0.913
The goal of CPR is to maintain the…	22 (71.0%)	9 (69.2%)	17 (53.1%)	48 (63.2%)	2.403	0.301
What is the compression /ventilation ratio for two rescuers in children?	22 (71.0%)	9 (69.2%)	16 (50.0%)	47 (61.8%)	3.296	0.192
Which organ cannot survive without Oxygen if the nurse doesn't initiate CPR promptly?	24 (77.4%)	5 (38.5%)	11 (34.4%)	40 (52.6%)	12.965	0.002 *
Check for pulse for no more than?	17 (54.8%)	8 (61.5%)	11 (34.4%)	36 (47.4%)	3.908	0.142

What is the correct sequence of the CPR steps, according to the 2010 AHA guidelines?	19 (61.3%)	7 (53.8%)	10 (31.3%)	36 (47.4%)	5.964	0.051 *
There are several things you need to do when you encounter a person in need of assistance. What should you do first?	14 (45.2%)	8 (61.5%)	9 (28.1%)	31 (40.8%)	4.688	0.096
What practice is safe and effective in the defibrillation sequence?	10 (32.3%)	4 (30.8%)	13 (40.6%)	27 (35.5%)	0.636	.728
What is the correct rate of compressions in a minute?	14 (45.2%)	2 (15.4%)	8 (25.0%)	24 (31.6%)	4.866	0.088
How often should the emergency trolley be checked in the ward?	13 (41.9%)	2 (15.4%)	8 (25.0%)	23 (30.3%)	3.785	0.151
What medication and in what dosage is it recommended to treat a patient with persistent ventricular fibrillation?	6 (19.4%)	5 (38.5%)	11 (34.4%)	22 (28.9%)	2.417	0.299
What is the recommended depth of chest compression?	7 (22.6%)	5 (38.5%)	8 (25.0%)	20 (26.3%)	1.241	0.538

Eleven (11) of the 20 questions were answered correctly by more than 50% of the respondents. The items which most respondents got correct were: *Which manoeuvre can be used to open the air way?* (74, 97.4%); *Pulse check is an essential initial step before CPR* (71, 94.7%) and *What is the first drug of choice given during cardiac arrest*? (68, 89.5%).

The items which the lowest number of respondents answered correctly were: *How often should the emergency trolley be checked in the ward?* (23, 30.3%), *what medication and in what dosage is it recommended to treat a patient with persistent ventricular fibrillation?* (22, 28.9%) and *what is the recommended depth of chest compression?* (22, 28.9%). Less than 50% of the respondents provided the correct response to nine out of the 20 questions.

4.4 Section C: Attitudes towards CPR

Attitudes towards CPR were measured in term of confidence and willingness to perform CPR.

4.4.1 Confidence

A total of 95% of respondents reported that they were confident in recognising a person in need of basic life support (72, 94.7%), whereas only 30 (39.5%) respondents reported that they were confident in providing chest compressions. Nearly 60% of respondents reported that they were confident in providing mouth-to-mouth ventilation (45, 59.2%).

4.4.2 Willingness

In considering willingness, less than 40% of respondents reported that they were willing to provide chest compressions to a stranger (29, 38.2%), while over 40% were willing to provide mouth-to-mouth ventilation to a stranger (35, 46.1%) and over 30% wanted other lay persons (trained in CPR) to try to resuscitate them if they are in need of CPR (25, 32.9%), indicating a lack of trust in training. There was no significant difference in attitudes among different qualification levels (Table. 4.7).

Table 4.7: Level of agreement with positive attitudes towards CPR

	Item	RN (n=31)	EN (n=13)	ENA (n=32)	Total (n=76)	Test $=X^2$	p-value
CONFIDENCE	Are you confident of recognising a person in need of basic life support?	30 (96.7%)	11 (84.6%)	31 (96.9%)	72 (94.7%)	3.222	.200
	Are you confident of providing chest compressions?	15 (48.4%)	4 (30.8%)	11 (34.4%)	30 (39.5%)	1.791	.408
	Are you confident of providing mouth-mouth ventilation (MMV)?	19 (61.3%)	6 (46.2%)	20 (62.5%)	45 (59.2%)	1.117	.572
WILLINGNESS	Are you willing to provide chest compressions to a stranger?	14 (45.2%)	6 (46.2%)	9 (28.1%)	29 (38.2%)	2.362	.307
	Will you be willing to provide mouth-mouth ventilation to a stranger?	14 (45.2%)	5 (38.5%)	16 (50.0%)	35 (46.1%)	0.512	.774
	Would you want other lay persons (trained in CPR) to try to resuscitate you if you are in need of CPR?	13 (41.9%)	5 (38.5%)	7 (21.9%)	25 (32.9%)	3.091	.213

4.5 Factors that influence practice of psychiatric nurses

In considering the factors that can influence the practice of CPR, the most-cited factor was lack of training, indicated by 68 (89.5%) of the respondents. This was closely followed by poor exposure to CPR at work (66, 86, 8%) and inadequate information on CPR (56, 73.7%). Lack of confidence and lack of willingness to conduct CPR were factors for 55 (72.4%) of the respondents. Lastly, a lack of resources to perform CPR (emergency trolley) was reported as a factor. There were no significant differences among respondents with different qualifications (Table 4.8).

Table 4.8: Factors that influence CPR practice of psychiatric nurses

Items	RN (n=31)	EN (n=13)	ENA (n=32)	Total (n=76)	Test X^2=	p-value
Lack of training to CPR	26 (83.9%)	13 (100%)	29 (90.6%)	68 (89.5%)	2.608	.271
Poor exposure (work place)	27 (87.1%)	12 (92.3%)	27 (84.4%)	66 (86.8%)	0.512	.774
Inadequate information on CPR	21 (67.7%)	11 (84.6%)	24 (75.0%)	56 (73.7%)	1.394	.498
Lack of confidence in conducting CPR	21 (67.7%)	11 (84.6%)	23 (71.9%)	55 (72.4%)	1.311	.519
Lack of willingness to conduct CPR	24 (77.4%)	11 (84.6%)	20 (62.5%)	55 (72.4%)	2.929	.231
Lack of resources to perform CPR (emergency trolley)	16 (53.3%)	9 (75.0%)	20 (62.5%)	45 (60.8%)	1.756	.416

4. 6 Summary

This chapter described the attitudes towards CPR and CPR competency of nurses at a hospital for intellectually disabled people in the Western Cape. The demographic profile of the respondents and the results of the study were described according to the objectives. The following chapter provides a discussion of these results.

CHAPTER 5: DISCUSSION OF RESULTS

5.1 Introduction

This chapter discusses the findings that were presented in the previous chapter. The researcher's focus was on investigating the attitudes towards CPR and CPR competency of nurses at a hospital for intellectually disabled people in the Western Cape. The key findings are discussed as follows: Knowledge of CPR, Level of agreement with positive attitudes towards CPR and Factors that influence the CPR practice of psychiatric nurses.

5.2 Knowledge of CPR

This section is divided into four sub-categories: Total knowledge scores of nursing categories, Knowledge score per unit, Knowledge by years of experience, and Per can't correct answers per category, which will be discussed in detail.

Competent and knowledgeable nurses can implement effective CPR interventions to save patients' lives (Rajeswaran & Ehlers, 2014). The results on the CPR knowledge and skills of nurses in the study show that 60% of nurses are competent in performing CPR. These findings are consistent with findings from other studies. In a study on the CPR knowledge and skills of registered nurses in Botswana, conducted by Rajeswaran and Ehlers (2014) the researchers found that participants' average CPR knowledge was 55.09%. A study on how often CPR training is necessary for nurses by Nori et al. (2012) in Iran found that 54.75% of subjects responded correctly to the CPR knowledge questions.

5.2.1 Total knowledge scores of nursing categories

There were significant differences in the knowledge scores between respondents with different qualifications, with RNs (65%) scoring higher than ENs (63%), who in turn scored

higher than ENAs (55%). These differences could be due to category levels: registered nurses are more highly qualified than enrolled nurses, who are more highly qualified than enrolled nursing assistant. This is consistent with the study by Tsegaye et al. (2015), where there was significant difference between qualification levels. A majority (n=227, 93.3%) of the respondents had excellent knowledge about CPR: 88 (36.1%) in the fifth year, 83 (34.2%) in the fourth year and 56 (23%) interns. Only 6.7% of them had poor knowledge (Tsegaye et al., 2015).

In the knowledge questions given to the respondents, out of 20 questions, the highest score was 18/20 (90%) and lowest score was 4/20 (20%). The difference in the scoring rate may be expected considering the differences in qualification levels among the respondents, or the reason could be that some nurses had previous CPR or BSL training. There are limited studies that focus on the range of the respondents' knowledge and skills scoring. Most studies focus on the experience of nurses, which I will discuss below, and their qualifications, which was discussed above.

5.2.2 Knowledge score per unit

The study showed no significant difference in knowledge score per unit, with the mean score of 12.0 (SD=-3.1). Among the categories of units, acute had a higher average than other units. This result may be expected due to the fact that nurses in the selected hospital are not placed according to specialities or qualifications, as is the case in general nursing units. Not all the units are exposed to CPR as they deal with mental issues. There are no studies done relating to CPR in psychiatric units, although there are many that suggest the difference in knowledge among different units in general hospitals.

5.2.3 Knowledge by years of experience

There was no significant difference in knowledge between respondents of varying working experience. This finding echoes those of a study on the CPR skills of registered nurses in Botswana, conducted by Rajeswaran and Ehlers (2014), which produced no significant differences in terms of gender, age or experience.

In the current study, respondents with less than 20 years of experience had a higher average score (12.3/20, 61.5%) than those with more 20 years of experience (11.5/20, 57.5%). This may because majority of the registered nurses, who are more qualified than other categories, have less than 20 years' experience. They are also updated with information and training more than enrolled and assistant nurses.

5.2.4 Per cent correct answers per category

A majority of the respondents knew the manoeuvre that can be used to open an airway. This high response may be due to the fact that it is compulsory for nurses to complete a first aid course in their first year. It forms part of training in the basic nursing curriculum. A study by Kanstad et al. (2011) on CPR knowledge and attitude towards performing bystander CPR among secondary school students in Norway stated that BLS is recommended as part of the school curriculum, and compulsory resuscitation training was introduced in Norwegian schools in 1961. These results are consistent with the study done by Kipsang and Bruce (2011), where the aim was to determine, describe and compare the CPR competence of advanced nursing students who had undergone two different levels of CPR training. Group I comprised those who received ALS training, and Group II comprised those who received BLS training only. Among the participants in Group I, 91.3% remembered to open the airway. The study also reveal that a majority of the respondents were aware that checking the

pulse is an essential initial step before CPR. Checking the pulse is one of the observations in a haemostasis that all the categories in nursing are presumed competent to perform (Kipsang & Bruce, 2011). The majority of respondents correctly identified adrenaline as the first choice of drug during cardiac arrest. It is expected that nurses would know this, even though there are no studies reporting on different nursing categories' knowledge on first drug of choice.

A majority of the respondents gave incorrect answers on the recommended depth of chest compression; only 26% identified the correct depth of chest compressions. Furthermore, the questions on the dosage that is recommended to treat a patient with persistent ventricular fibrillation, and checking of the emergency trolley in the ward were both answered poorly (30%). A lack of training and exposure to CPR could be the reason for poor performance on these knowledge items on CPR. Tsegaye et al. (2015) confirm this in their study, which revealed that lack of training is a major factor affecting practice of CPR.

5.3 Level of agreement with positive attitudes towards CPR

This section is divided into two sub-categories: Confidence in performing CPR, and Willingness to perform CPR, which will be discussed in detail.

5.3.1 Confidence in performing CPR

The findings from this study revealed that the respondents are confident (95%) in recognising a person in need of basic life support, and there is no significant difference in terms of different qualification levels. Since the nurses have direct contact with the patients, they are exposed to patients in need of CPR and able to engage in their role as in-hospital first responders. They acquire a greater sense of control and confidence with more exposure to

these scenarios. The study done by Lyneham and Marzooq (2009) on CPR knowledge among nurses in Bahrain reported that, in hospitals worldwide, it is usually the nurse who discovers a cardiac arrest (loss of consciousness, absence of pulse and breathing) and initiates the procedure of CPR. This is supported by Vural et al. (2017). They further mention that the doctors, nurses and paramedical staff should be instructed to complete CPR courses, as they routinely face life-threatening situations, and knowledge of CPR is definitely useful, especially in hospitals.

The findings of this study also revealed that 40% of the respondents are confident in providing chest compressions. This shows a very low confidence in performing chest compressions among the nurses. This may be due to nurses not being exposed or updating their knowledge and skills on CPR, or fear of causing injury to a person in need of CPR. Similarly, Hebert (2017) reported that nurses fear causing harm to the patient and feel nervous or anxious, which may hamper their ability to perform compressions. This contrasts with the study done by Tsegaye et al. (2015) in which more than half (63%) of the respondents were confident in conducting chest compressions.

The findings of this study also revealed that more than half of the respondents (59%) were confident in providing mouth-to-mouth ventilation. This figure may be just above 50%, but it shows a positive signs of eagerness among nurses to provide mouth-to-mouth ventilation. The fact that some nurses might not be confident in providing ventilation may be due to lack of exposure or anxiousness about causing more harm to the person in need of CPR.

5.3.2 Willingness to perform CPR

Mouth-to-mouth ventilation is an intimate act that may influence the decision of potential rescuers to perform CPR (Vaillancourt, Stiell & Wells, 2008). In this study, less than half of the respondents (46%) indicated willingness to provide mouth-to-mouth ventilation to a stranger. This is consistent with the literature by Hung et al. (2017), which reported that, of a randomly selected cohort of respondents who completed a questionnaire, 13.0% of them indicated that they were willing to attempt CPR for their families and friends but only 7.0% of them were willing to do it for strangers. This could be due to the fact that they don't want to be infected or to perform it to a different gender, which could be embarrassing. Similarly, in a study done by Olateju and Amoran (2014), 81.8% of the respondents were more likely to perform mouth-to-mouth ventilation for a family member, while only 48.6% were willing to do so for a stranger. Another reason could be the legal ramifications if a nurse were to cause harm to the person in need of CPR. According to Hung et al. (2017), in their literature on willingness to perform CPR, another reason is fear of being infected. In Western Australia, people were more willing to perform CPR for friends or relatives than strangers due to health and safety concerns.

A third (33%) of the respondents in this study indicated that they would want lay persons trained in CPR to resuscitate them if there was a need to do so. This results are very low regarding the confidence and willingness of respondents to perform CPR. It is evident that people have confidence in health care professionals and trust them with their lives. Patients and the lay public have an inherent expectation that health care professionals are adequately prepared to provide safe and effective CPR in the event of an emergency (Kipsang & Bruce, 2011).

5.4 Factors that influence the CPR practice of psychiatric nurses

There was no significant difference in factors that influence CPR practice in psychiatric nurses. The findings of this study indicated that most of the respondents (90%, n=68) agreed that the lack of training in CPR is one of the factors that influence CPR practice among psychiatric nurses. Although the researcher could not locate studies on CPR among psychiatric nurses specifically, many studies were done on CPR in general nursing practice, which indicated that lack of training is a major factor in CPR practice among nurses in hospitals. Tsegaye et al. (2015) reported similar results in a study on knowledge, attitude and practice of CPR and associated factors in Ethiopian university medical students. Most of the respondents (235, 98.7%) reported lack of training as a major factor affecting the practice of CPR. Lyneham and Marzooq (2009) reported that a majority of participants in their study believed that the reason behind the poor recall of CPR knowledge was the lack of proper updating guidelines and training in CPR.

Most of the respondents (87%, n=66) in this study reported that poor exposure to CPR in the workplace is a major contributory factor to performing CPR. This might be because the hospital is dealing with psychiatric patients, not general nursing patients, upon whom CPR is performed often. Tsegaye et al. (2015) reported similar results, pointing to poor exposure (93.56%) as a factor affecting CPR performance. Almost three quarters (72.4%, n=55) of the respondents pointed to a lack of confidence in performing CPR. This result could be due to the lack of training and information on CPR. A majority (84%) of the respondents in Tsegaye et al.'s (2015) study pointed to lack of confidence as a factor affecting the practice of CPR, which is similar to a study done in Korea, where nurses were found to need training every four months, otherwise they forget. Oh and Han (2008)

CHAPTER SIX: CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter will summarise the findings and conclude the study by identifying its limitations and providing recommendations based on the findings. The focus of the study was on investigating the attitudes towards CPR and the CPR competency of nurses at a hospital for intellectually disabled people in the Western Cape. This was done by fulfilling the objectives of the study, which were to: (1) determine the attitudes towards CPR of nurses working with patients with intellectual disability; (2) determine the CPR competency of nurses working with patients with intellectual disability; and (3) determine the factors that influence CPR competence and attitudes of professional and enrolled nurses working with patients with intellectual disability. A detailed search of literature pertaining to the study was conducted by the researcher. The researcher observed that there were limited studies related to the topic of interest in the literature, especially locally. To achieve the objectives of this study, a quantitative, descriptive design was used to describe attitudes and competency regarding CPR among nurses.

6.2. Summary

The three objectives of the study were addressed as follows:

Objective 1: To determine the attitudes towards cardiopulmonary resuscitation of nurses working with patients with intellectual disability.

The findings from this study revealed that the respondents are confident in recognising a person in need of CPR, although they are not confident in executing CPR skills, like providing chest compressions and mouth-to-mouth ventilation. The study also revealed that nurses lack willingness to perform CPR on strangers. Overall, a majority of participants had

positive attitudes towards CPR, but this is not sufficient as CPR is a life-saving measure that every health professional should be confident in performing.

Objective 2: To determine the cardiopulmonary resuscitation competency of nurses working with patients with intellectual disability

The study revealed that nurses had poor knowledge and skills in CPR. Their total score did not meet the minimum score of 84%, as benchmarked against the AHA BLS course. Registered nurses were more knowledgeable than enrolled nurses and assistant nurses. In terms of working experience, nurses with less experience had more knowledge than nurses with more experience and the is no difference between the units in which a nurse is working in terms of how knowledgeable a nurse is on CPR.

Objective 3: To determine the factors that influence cardiopulmonary resuscitation competence and attitudes of professional and enrolled nurses working with patients with intellectual disability

The findings of this study indicated that most of the respondents agreed that the lack of training and lack of exposure to CPR in the workplace are factors that influence the CPR practice of psychiatric nurses.

6.3 Limitations

This study was only localised at one psychiatric hospital; therefore, the findings cannot be generalised to other psychiatric institutions. Use of only one type of method might have limited the quality of the results. Furthermore, there was considerable difficulty in finding relevant studies related to CPR in a psychiatric context.

6.4 Recommendations

6.4.1 Clinical practice

For CPR to be successful, an emergency trolley needs to be available in the unit. An institution should buy all the required equipment on the emergency trolley, which is something that is lacking in the hospital under study. The hospital should supply each ward with posters with information and guidelines on CPR, which should be placed in an area that is visible to everyone. Findings will be presented to the institutions by the researcher.

6.4.2 Nursing education

Formal BLS and ACLS training, as well as regular in-service training, are recommended for all the nurses in the institution. Regular CPR training workshops and refresher courses should be organised so that nurses do not forget their skills and knowledge of CPR. Also, researcher will be publishing an article and attend seminars and conferences to present the findings.

6.4.3 Research

Since this study used only one hospital that specialises in intellectual disability, it is the researcher's recommendation that further research be conducted in all the psychiatric hospitals that cater for patients with intellectual disability, which will provide a base for generalisation of the study findings. Since the study used a descriptive, experimental design (pre-test, post and re-test), it is recommended that the effect of time on retention be assessed.

6.5 Conclusion

The aim of the study was to investigate the attitudes towards CPR and CPR competency of nurses at a hospital for intellectually disabled people in the Western Cape. The findings have indicated that nurses have poor knowledge and skills in CPR. They also highlighted that

nurses lack confidence in performing CPR, indicating that lack of training and information on CPR plays a huge role.

REFERENCES

Abdelmawla, N. & Mitchell, A. J. (2006). Sudden cardiac death and antipsychotics. Part 1: Risk factors and mechanisms. *Advances in Psychiatric Treatment*, *12*(1):35–44.

Adnams, C. M. (2010). Perspectives of intellectual disability in South Africa: epidemiology, policy, services for children and adults. *Current Opinion in Psychiatry*, *23*:436–440

Al-Turki, Y. A., Al-Fraih, Y. S., Al-Rashoudi, Azzam, F. H. & Otaibi, A. (2008). Knowledge and attitudes towards cardiopulmonary resuscitation among university students in Riyadh, Saudi Arabia. *Saudi Medical Journal*, *9*:29.

American Heritage® Dictionary of the English Language. (2011). Fifth edition. Houghton Mifflin Harcourt Publishing Company.

Brink, H., Van der Walt, C. & Van Rensburg, G. (2012). *Fundamentals of research methodology for healthcare professionals*. Cape Town: Juta & Company, South Africa.

Capri, C. & Swartz, L. (2018). "We are actually, after all, just children": caring societies and South African infantilisation of adults with intellectual disability, *Disability and Society*, *33*(2):285–308.

Cheng, M. D., Brown, L. & Duff, J. P. (2015). Improving cardiopulmonary resuscitation with a CPR feedback device and refresher simulations (CPR CARES study). *JAMA Pediatr.*, *169*(2):137–144.

Concise Oxford Dictionary. (2005).

Cooper, S. A., Melville, C. & Morrison, J. (2004). People with intellectual disabilities. *BMJ*, 329.

Grove, S., Burns, N. & Gray, J. (2013). *The practice of nursing research*, seventh edition. Elsevier.

Grønborg, S. & Uldall, P. (2014). Mortality and causes of death in children referred to a tertiary epilepsy centre. *European Journal of Paediatric Neurology*, *18*(1), 66–71.

Hebert, R. L. (2017). Initiation of in-hospital CPR: An examination of nursing behaviour within their scope of practice (doctoral dissertation, Université d'Ottawa/University of Ottawa).

Hung, M. S. Y., Chow, M. C. M., Chu, T. T. W., Wong, P. P., Nam, W. Y., Chan, V. L. K. & Chan, T. H. (2017). College students' knowledge and attitudes toward bystander cardiopulmonary resuscitation: A cross-sectional survey. *Cogent Medicine*, *4*(1), 1334408.

Ilyas, R., Zaman, K. S. E., Pradhan, N., Feroz, H., Jamal, Z., Amjad, N. & Ahmed, Q. (2014). Retention of knowledge and skills of basic life support among health care providers trained in tertiary care hospital. *Pakistan Heart Journal*, *47*(1):39–45.

International Disability Right Service. (2009). Introduction to intellectual disability. Available at: www.idrs.org [Accessed 17 February 2016].

Kalhori, R. P., Jalali, A., Naderipour, A., Almasi, A., Khavasi, M., Rezaei, M. & Abbasi, M. (2017). Assessment of Iranian nurses and emergency medical personnel in terms of cardiopulmonary resuscitation knowledge based on the 2010 guideline. *Iranian Journal of Nursing and Midwifery Research*, 2*2*(3):184.

Kanstad, B. K., Nilsen, S. A. & Fredriksen, K. C. P. R. (2011). CPR knowledge and attitude to performing bystander CPR among secondary school students in Norway. *Resuscitation*, *82*(8):1053–1059.

Keulen-de Vos, M. & Frijters, K. (2016). Aggressive behaviour in offenders with intellectual disabilities. In M. Cima (Ed.), *The Handbook of Forensic Psychopathology and Treatment* (pp. 276–306).

Kipsang, J. & Bruce, J. C. (2011). A comparison of cardiopulmonary competence between two groups of advanced practice student nurses at a medical training college in Kenya. *Africa Journal of Nursing and Midwifery*, 13(2).

Kozamani, A., Kapadochos, T. & Kadda, O. (2012). Factors that influence nursing staff attitudes towards initiating CPR and in using an automatic external defibrillator when outside of a hospital. *Health Science Journal*, *6*(1):88.

Lyneham, H. & Marzooq, J (2009) Cardiopulmonary resuscitation knowledge among nurses working in Bahrain. *International Journal of Nursing Practice*, 15(4):294–302.

McLeod, S.A. (2014). Attitude and behavior. Retrieved from www.simplypsychology.org.

Munezero, J. B. T., Atuhaire, C., Groves, S. & Cumber, S. N. (2018). Assessment of nurse's knowledge and skills following cardiopulmonary resuscitation training at Mbarara Regional Referral Hospital, Uganda. *The Pan African Medical Journal, 30*.

Ndengeyingoma, A. & Ruel J. (2016). Nurses' representations of caring for intellectually disabled patients and perceived needs to ensure quality care: *Journal of Clinical Nursing, 25*(21–22):3199–3208.

Nori, J. M., Saghafinia, M., Motamedi, M. K. & Hosseini, S. K. (2012). CPR training for nurses: How often is it necessary? *Iranian Red Crescent Medical Journal, 14*(2), 104.

Olateju, S. O. & Amoran O. E (2014). Knowledge and attitudes towards basic cardiopulmonary resuscitation (CPR) among community nurses in Remo Area of Ogun State, Nigeria. *Journal of Community Medicine and Primary Health Care,* 26(1):88–95.

Plagisou, L., Tsironi, M. Zyga, S., Moisoglou, I., Maniadakis, N. & Prezerakos, P. (2015). Assessment of nursing staff's theoretical knowledge of cardiovascular resuscitation in an NHS public hospital. *Hellenic Journal of Cardiology,* 56:149–153.

Polit, D. F. & Beck, C. T. (2012). *Nursing research, generating and assessing evidence for nursing practice* (ninth edition). Wolters Kluwer Health/Lippincott Williams & Wilkins.

Rajeswaran, L. (2009). Cardio-pulmonary resuscitation: Perception, needs and barriers experience by the registered nurses in Botswana (doctoral dissertation, University of South Africa).

Rajeswaran, L. & Ehlers, V. J. (2014). Cardiopulmonary resuscitation knowledge and skills of registered nurses in Botswana. *Curationis*, *37*(1).

South Africa. (2002). Mental Health Care Act 17 of 2002. Pretoria: Government Printers.

Sankar, J., Vijayakanthi, N., Sankar, M. J., & Dubey, N. (2013). Knowledge and skill retention of in-service versus preservice nursing professionals following an informal training program in pediatric cardiopulmonary resuscitation: a repeated-measures quasi experimental study. BioMed research international, 2013.

Statistics South Africa. (2015).

Terzi, A. B. (2012). Nurse's role in the modern resuscitation era. *Hospital Chronicles*, *7*(1):25–31.

Tsegaye, W., Tesfaye, M. & Alemu, M. (2015). Knowledge, attitude and practice of cardiopulmonary resuscitation and associated factors in Ethiopian university medical students. *Journal of General Practice*, *3*:1–5.

Vaillancourt, C., Stiell, I. G. & Wells, G. A. (2008). Understanding and improving low bystander CPR rates: a systematic review of the literature. *Canadian Journal of Emergency Medicine, 10*(1):51–65.

Vural, M., Koşar, M. F., Kerimoğlu, O., Kızkapan, F., Kahyaoğlu, S., Tuğrul, S. & İşleyen, H. B. (2017). Cardiopulmonary resuscitation knowledge among nursing students: a questionnaire study. *Anatolian Journal of Cardiology,* 17(2):140.

World Health Organization (WHO). (2009). Global Health Observatory: Non-communicable diseases mortality and morbidity. Available at: http://www.who.int/gho/ncd/mortality_morbidity/en/index.html [Accessed 5 February 2018].

ANNEXURES

Annexure A: Ethics clearance letter

OFFICE OF THE DIRECTOR: RESEARCH
RESEARCH AND INNOVATION DIVISION

Private Bag X17, Bellville 7535
South Africa
T: +27 21959 2988/2948
F: +27 21959 3170
E: research-ethics@uwc.ac.za
www.uwc.ac.za

28 August 2017

Mr L Lolwana
School of Nursing
Faculty of Community and Health Sciences

Ethics Reference Number: BM17/3/5

Project Title: Investigating attitudes towards cardiopulmonary resuscitation and cardiopulmonary resuscitation competency of nurses at a hospital for intellectually disable people in the Western Cape

Approval Period: 24 August 2017 – 24 August 2018

I hereby certify that the Biomedical Science Research Ethics Committee of the University of the Western Cape approved the Scientific methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

PROVISIONAL REC NUMBER -130416-050

Annexure B: Permission letter from Western Cape Department of Health

STRATEGY & HEALTH SUPPORT

Health.Research@westerncape.gov.za tel: +27 21 483 6857: fax: +27 21 483 9895 5th Floor, Norton Rose House,, 8 Riebeek Street, Cape Town, 8001 www.capegateway.gov.za)

REFERENCE: WC 201708 026

ENQUIRIES: Ms Charlene Roderick

University of Western Cape

Robert Sobukwe Road

Bellville

Cape Town

7535

For attention: Mr Lulama Lolwana

Re: **Investigating attitudes towards cardiopulmonary resuscitation and cardiopulmonary resuscitation competency of nurses at a hospital for intellectually disabled people in the Western Cape.**

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research.

Please contact following people to assist you with any further enquiries in accessing the following

sites:

Alexandra Hospital	Ms Joy Harding	021 503 5009

Kindly ensure that the following are adhered to:

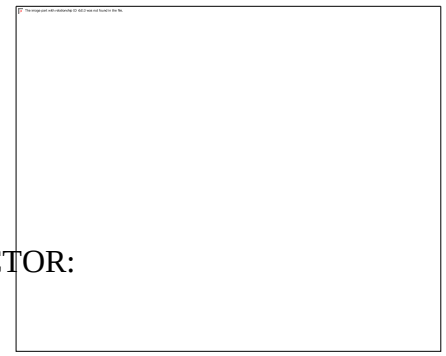
- Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.

2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final feedback (annexure 9) within six months of completion of research. This can be submitted to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).

3. In the event where the research project goes beyond the estimated completion date which was submitted, researchers are expected to complete and submit a progress report (Annexure 8) to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).

4. The reference number above should be quoted in all future correspondence.

Yours sincerely



DR A HAWK IDG

DIRECTOR:

DATE:

Annexure C: Information sheet

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 3024 Fax: 27 21-959 2679

E-mail: 2928764@myuwc.ac.za

INFORMATION SHEET

Project Title: Investigating attitudes towards cardiopulmonary resuscitation and cardiopulmonary resuscitation competency of nurses at a hospital for intellectually disabled people in the Western Cape

What is this study about?

This is a research project being conducted by *Mr Lulama Lolwana* at the University of the Western Cape. We are inviting you to participate in this research project because you are valuable participant in this study and you could help the researcher in obtaining the necessary information for this purpose. The purpose of this research project is to investigate the attitudes towards cardiopulmonary resuscitation and cardiopulmonary resuscitation competency of nurses at a hospital for intellectually disabled people in the Western Cape. The knowledge gained from this study will improve the information needed for training of nurses in cardiopulmonary resuscitation.

What will I be asked to do if I agree to participate?

You will be asked to complete a research questionnaire that has questions relating to your knowledge and skills about CPR, your attitude towards CPR and factors about the practice of CPR. The questionnaire will take about 20-30 minutes to complete.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, you will not be asked to add your name on the questionnaire.

To ensure your confidentiality, the researcher will ensure that the research questionnaires are answered in a quiet place where there will be no distractions. The research questionnaires will not be exposed or given to anyone other than the immediate involved personnel. The

research questionnaires will be locked in a lockable cupboard that is only open with the code that is known to the researcher. The collected information will be safely destroyed by the researcher in within the University policy after completion of the study within a period of 5 years. If we write a report or article about this research project, your identity will be protected as the hospital will not be named in the report.

What are the risks of this research?

There may be some risks from participating in this research study. This study might elicit psychological and emotional responses from you as the research questions could provoke some unintended emotions. You might feel embarrassed or fear in answering some of the questions. You will be referred to a pre-arranged counsellor should you feel the need to speak to someone.

What are the benefits of this research?

The benefits of the study are the quantification of nurses' knowledge and attitudes towards CPR. The study will give the cardiopulmonary resuscitation trainers an opportunity to identify and may shape cardiopulmonary resuscitation training.

This research is not designed to help you personally, but the results may help the investigator learn more about the knowledge that the nurses' needs for cardiopulmonary resuscitation. We hope that, in the future, other people might benefit from this study through improved understanding of the knowledge of nurses that will in turn improve the nurses' services to psychiatric patients.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being conducted by school of nursing at the University of the Western Cape. If you have any questions about the research study itself, please contact Lulama Lolwana at: 2928764@myuwc.ac.za

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Prof Jennifer Chipps
Head of Department
University of the Western Cape
Private Bag X17
Bellville 7535
jchipps@uwc.ac.za

Prof José Frantz
Dean of the Faculty of Community and Health Sciences
University of the Western Cape
Private Bag X17
Bellville 7535
chs-deansoffice@uwc.ac.za

This research has been approved by the University of the Western Cape's Senate Research Committee. (REFERENCE NUMBER:BM17/3/5)

Annexure D: Consent form

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 3024 Fax: 27 21-959 2679

E-mail: 2928764@myuwc.ac.za

CONSENT FORM

Title of Research Project:

Investigating attitudes towards cardiopulmonary resuscitation and cardiopulmonary resuscitation competency of nurses at a hospital for intellectually disabled people in the Western Cape

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

Participant's name…….

Participant's signature……

Date……

Annexure E: Questionnaire – CPR competency survey

CPR COMPETENCY SURVEY
SECTION A: DEMOGRAPHICS

1. Age: _____

2. Gender:

Male		Female	

3. Unit: _____

4. Qualification:

Registered Nurse		Enrolled Nurse		Nurse Assistant	

5. Years working experience: _____

SECTION B: Knowledge and skills about CPR
Answer each question by tick (X) in the appropriate

6. How often should the emergency trolley be checked in the ward?

A	Every day		B	Every Monday	
C	Each shift		D	Once weekly	

7. Pulse check is an essential initial step before CPR. True or False?

A	True		B	False	

8. Check for pulse for no more than?

A	10 Seconds		B	5 seconds	
C	15 Seconds		D	20 Seconds	

9. When assessing the unconscious victim for pulselessness, which of the following is the best artery to check?

A	Radial		B	Femoral	
C	Carotid		D	Brachial	

10. Which organ cannot survive without Oxygen if the nurse doesn't initiate CPR Promptly?

A	heart		B	brain	
C	lungs		D	blood vessels	

11. The goal of CPR is to maintain the

A	heart beat until respirations are restored	
B	respirations until the heart beat is restored	
C	consciousness until the heart beat is restored	
D	oxygenation and circulation until heart beat and respirations are restored	

12. There are several things you need to do when you encounter a person in need of assistance. What should you do first?

A	check for danger		B	commence CPR	
C	call for help		D	determine responsiveness	

13. What is the correct sequence of the CPR steps, according to the 2010 AHA guidelines?

A	A-B-C [Airway, Breathing, Chest compressions].	
B	C-A-B [Chest compressions, Airway, Breathing].	
C	C-B-A [Chest compressions, Breathing, Airway	
D	B-C-A [Breathing, Chest compressions, Airway	

14. Which manoeuvre can be used to open the airway?

A	sweep finger in mouth,	
B	head tilt-chin lift,	
C	chin tilt-head lift	

15. Which one of the following describes the best way to give mouth-to-mouth ventilation after the nurse open the airway and pinch the nose of an unresponsive adult?

A	Seal the nurse mouth over the victim's mouth and give 2 breaths, watching the chest to rise.	
B	Put the mouth on the victim's mouth and give small puffs	
C	Put the mouth on the victim's mouth and give 1 slow breath for 5 seconds	
D	Put the mouth on victim's mouth and give 5 slow breaths for 2 seconds	

16. What is the compression/ ventilation ratio for a single rescuer?

A	15:2		B	30:2	
C	20:2		D	10:2	

17. What is the compression/ventilation ratio for two rescuers in children?

A	15:2		B	30:2	
C	20:2		D	10:2	

18. What is the correct rate of compressions in a minute?

A	120		B	140	
C	80		D	100	

19. What are the minimum time interruptions the nurse should observe during CPR?

A	15 seconds		B	10 seconds	
C	20 seconds		D	30 seconds	

20. What is the recommended way to determine the location point for chest compressions?

A	place two fingers at the point where the lower ribs meet, then place your other hand next to that	
B	find the centre of the chest (lower half of the sternum)	

21. What is the recommended depth of chest compression?

A	at least 1 ½cm	
B	at least 5cm	

C	at least 3cm	
D	Depth is not important as long as compressions are being done.	

22. What is the first drug of choice given during cardiac arrest?

A	Atropine	
C	Adrenaline	

B	Vasopressin	
D	Magnesium Sulphate	

23. What medication and in what dosage is it recommended to treat a patient with persistent ventricular fibrillation?

A	2 mg atropine	
B	300 mg amiodarone	
C	1 mg/kg vasopressin	
D	2 mg/kg per minute of dopamine	

24. What practice is safe and effective in the defibrillation sequence?

A	Stop chest compressions when loading the defibrillator	
B	Make sure no oxygen is circulating in patient's chest during discharge.	
C	Determine the presence of pulse immediately after discharge	
D	Announce imperatively "clear" after administering the charge with the defibrillator.	

25. What is the benefit of minimising interruptions of chest compressions during CPR?

A	There is no need to worry about interrupting the chest Compressions	
B	Minimising thee interruptions means the rescuer will not be tired giving CPR	

C	Only advanced care professionals need to worry about minimising interruptions	
D	Minimising the interruptions during chest compressions increases the victim's chances of survival.	

SECTION C: Attitudes towards CPR among Nurses.

Questions related to attitude*	Definitely	Likely	Unlikely	Definitely not	Do not know
26. Are you confident of recognizing a person in need of basic life support?					
27. Are you confident of providing chest compressions?					
28. Are you confident of providing mouth-mouth ventilation (MMV)?					
29. Are you willing to provide chest compressions to a stranger?					
30. Will you be willing to provide mouth-mouth ventilation to a stranger?					
31. Would you want other lay persons (trained in CPR) to try to resuscitate you if you are in need of CPR					

SECTION D: Factors that influence CPR practice of psychiatric nurses

FACTORS	Practice of CPR	
	YES	NO
32. Lack of training		
33. Poor exposure (work place)		
34. Lack of confidence		
35. Lack of willingness to conduct CPR		
36. Inadequate information		
37. Lack of resources to perform CPR (emergency trolley)		

Thank you for participating in the survey

Annexure F: Codebook

Code book

Variable	SPSS variable name	Coding instruction
Number of each questionnaire assigned to identify it.	ID	Number assigned to each questionnaire
Age in years	Age	Age in years
Gender	Gender	1= Male 2= Female
Unit	Unit	
Years of experience	Experience	Experience in years
Qualification	Category	1= PN 2= EN 3= ENA
Competency (Knowledge and skills)	Item 6-Item 25	
Attitude to CPR	Item 26- Item 31	1= Definitely 2= Unlikely 3= Definitely not 4= Do not know
Factors about CPR practice	Item 32- Item 37	1= Yes 2= No