

https://dspace.org/

# Development and implementation af a workshop to improve assessment - based nursing diagnoses by nurses at a private hospital

**Naicker, Treshika**

**2019**
https://hdl.handle.net/10539/28103

Downloaded from a DSpace repository. https://dspace.org/

# DEVELOPMENT AND IMPLEMENTATION OF A WORKSHOP TO IMPROVE ASSESSMENT- BASED NURSING DIAGNOSES BY NURSES AT A PRIVATE HOSPITAL

**Treshika Naicker**

A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Nursing

Johannesburg, 2019

**DECLARATION**

I, Treshika Naicker declare that this Research Report is my own, unaided work. It is being submitted for the Degree of Master of Science in Nursing at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.



Signature: Date: 14/06/2019

Protocol number: M180449

Student number: 1791544

## DEDICATION

I dedicate this research study to my husband Malvin and my two delightful boys Nikhil and Kivaan without whom, life will be dull and boring. I just want to say thank you for your love, patience, unwavering support and understanding that life is about balance and thus important for me to aspire to achieve my own personal goals.

## ABSTRACT

### Introduction and background

“Assigning a nursing diagnosis based on a medical diagnosis skips several essential steps to optimal and safe patient care” (NANDA 2013). A nursing diagnosis provides a baseline for nursing interventions; therefore it is essential to improve the ability of nurses to formulate an assessment-based nursing diagnosis. The inadequacy of an assessment-based nursing diagnosis is due to the inability of nurses to assess patients correctly and critically, resulting in poor patient care.

### Purpose / Aim

The study aims to develop and implement a workshop that will improve the ability of nurses to assess patient’s signs and symptoms, causative factors and problems in order to formulate an assessment-based nursing diagnosis.

### Methodology

The study adopted a quantitative one group pre-test, post-test intervention design. Quantitative research personifies investigations where the relative data is examined in terms of numbers that may be quantified and summarized. Data was extracted from the pre-test and analysed, resulting in formulation of the workshop (intervention) which sought out to improve the ability of nurses in formulating assessment-based nursing diagnoses. A post-test was done directly after the workshop. Data was then extracted from the post-test and analysed. A comparison between the pre-test and post-test data yielded results of the study.

### Population and setting

The setting for this study was at a Private Hospital in Gauteng, belonging to a large hospital group. The population i.e. registered nurses, were in permanent employment of a private hospital in Gauteng.

## Data analysis

The researcher and the supervisor moderated, reviewed and interpreted the data extracted from the pre-test and the post-test, through descriptive statistics. A comparison between the pre-test and post-test results revealed the effectiveness of the workshop.

## Main findings

As established earlier a proper nursing diagnosis means optimal, safe and quality nursing care. Thus, a nursing diagnosis is a judgement based on a comprehensive nursing assessment. The sole purpose of the study was to improve the ability of nurses in formulating an assessment-based nursing diagnosis in order to provide quality patient care. The main findings of the study, was that it was effective to an extent in improving the ability of nurses in formulating assessment-based nursing diagnosis from the pre-test to the post-test, confirming participants now understood the importance of assessment-based nursing diagnosis on patient care.
Although there was significant improvement from the pre-test results to the post-test results, there was still a lack of proper formulation of an assessment-based nursing diagnosis. This was due to the fact that some nurses' still lack knowledge as to what are normal values for example in regard to vital signs or blood results etc. It was also due to some of the nurses not having a good knowledge base of chemistry, anatomy, physiology, pathophysiology or pharmacology and clinical experience.

## Key words

Private hospital, assessment-based nursing diagnosis, registered nurses and workshop.

**ACKNOWLEDGEMENTS**

**I wish to express my sincere gratitude and appreciation to the following people:**

- To my supervisor Lizelle Crous for your motivation and support during the research process. I appreciate your ability to listen attentively, value my individual input and what would best suit the study.

- To my parents Shan and Premilla for raising me with love, happiness and a positive attitude and instilling in me the importance of education, the need to value myself and the world around me.

- To my parents-in-law Sagie and Babes, my sincere appreciation for your love and support.

- To my sister Vanessa for your lifelong bond of love and friendship and to my brother-in-law Neville, thank you for encouraging me to enter the profession in order to make a difference in the lives of students and patients.

- To Dr Sue Armstrong for your lectures on relevant issues that have inspired and fostered a sense of lifelong learning, as well as freedom of expression.

- To my students thank you for allowing me the opportunity to teach and learn from you, in order to be compassionate, understanding and knowledgeable practitioners.

- To the group of experts for your contribution to the research.

- To the Human Research Ethics committee of the faculty of health sciences, the post graduate assessors committee and the University of Witwatersrand for granting me permission to conduct my research.

- To the participants for volunteering your time and effort in attending the sessions.

- To the hospital ethics group, hospital manager, nursing manager, patient relationship manager and the learning and development facilitator for allowing me to conduct the study at your hospital.

- To my colleagues at the Learning Centre thank you for your support and encouragement.

**TABLE OF CONTENTS**


**DECLARATION** **II**

**DEDICATION** **III**

**ABSTRACT** **IV**

Introduction and background IV

Purpose / Aim IV

Methodology IV

Population and setting IV

Data Analysis V

Main findings V

Key words V

**ACKNOWLEDGEMENTS** **VI**

**LIST OF FIGURES** **XII**

**LIST OF TABLES** **XIII**

**CHAPTER 1** **1**

**OVERVIEW OF THE STUDY** **1**

1.1 Introduction 1

1.2 Background to the study 1

1.3 Motivation and rationale for the study 3

1.4 Significance of the study 4

1.5 Problem statement 4

1.6 Research question 4

1.7 Purpose and objectives of the study 5

1.8 Research design and method 5

1.9 Definition of key concepts 5

1.10 Outline of the research report 7

1.11 Summary 8

**CHAPTER 2** **9**

**LITERATURE REVIEW** **9**

2.1 Introduction 9

2.2 Assessment-based nursing diagnosis 10

2.2.1 The nursing process 10

2.2.1.1 Assessment (The 1st phase of the nursing process) 11

2.2.1.2 Analysis and formulation of a nursing diagnosis 12

(The 2nd phase of the nursing process)
2.3 Critical thinking and clinical reasoning 13
2.4 A workshop as a training strategy 14
2.4.1 The ADDIE Model 16
2.5 Summary 17
**CHAPTER 3** **18**
**RESEARCH METHOD** **18**
3.1 Introduction 18
3.2 Research setting 18
3.3 Population and sampling 18
3.4 Research method and design 19
3.4.1 Validity of the research design 20
3.4.2 Characteristics and contribution of the one group pre-test, post-test research design 22
3.5 Data collection 24
3.5.1 Validity of the data collection process 26
3.6 The criteria 28
3.6.1 Validity of the criteria 32
3.7 The Experts 33
3.8 The assessment-based nursing diagnoses and the case study scenario 36
3.9 The intervention 38
3.10 Data analysis 40
3.11 Validity and reliability 41
3.12 Ethical considerations 42
3.13 Summary 43
**CHAPTER 4** **44**
**PRESENTATION AND DISCUSSION OF FINDINGS** **44**
4.1 Introduction 44
4.2 Study population demographics 44
4.2.1 Participants' feedback regarding the workshop 44
4.3 Data analysis and interpretation 45
4.3.1 Pre-test data analysis 45
4.3.2 Post-test data analysis 48
4.3.3 Comparison between the pre-test and post-test data 50

4.4 Measures of central tendency of the pre-test and post-test data 53
4.4.1 Comparison between the mean, median and mode of the pre-test and the post-test 53
4.5 Summary 54
**CHAPTER 5 55**
**MAIN FINDINGS, LIMITATIONS, RECOMMENDATIONS AND CONCLUSIONS 55**
5.1 Introduction 55
5.2 Summary of the main findings 55
5.3 Limitations 57
5.4 Recommendations 58
5.4.1 Nursing education 58
5.4.2 Nursing research 59
5.4.3 Nursing practice 59
5.5 Conclusions 60
**REFERENCES 61**
**APPENDICES 67**
**APPENDIX 1 CASE STUDY SCENARIO AND ANSWER SHEET 67**
**APPENDIX 2 CRITERIA FOR ASSESSMENT-BASED NURSING DIAGNOSIS (ACTUAL) 70**
**APPENDIX 3 ASSESSMENT-BASED NURSING DIAGNOSES FORMULATED FROM THE SCEANARIO 73**
**APPENDIX 4 FEEDBACK LETTER WITH PRE-TEST DATA GIVEN TO EXPERTS, REQUESTING OBJECTIVES FOR INCLUSION INTO THE WORKSHOP 74**
**APPENDIX 5 PARTICIPANTS' CONSENT 79**
**APPENDIX 6 THE EXPERTS' FEEDBACK FORM REGARDING THE ASSESSMENT-BASED NURSING DIAGNOSIS CRITERIA 81**
**APPENDIX 7 LESSON PLAN 82**
**APPENDIX 8 PARTICIPANTS' FEEDBACK 84**
**APPENDIX 9 HREC (MEDICAL) CLEARANCE CERTIFICATE 85**
**APPENDIX 10 PERMISSION FROM THE HOSPITAL MANGER TO CONDUCT THE RESEARCH 86**
**APPENDIX 11 PERMISSION FROM THE HOSPITAL NURSING SERVICES MANAGER TO CONDUCT THE RESEARCH 88**
**APPENDIX 12 PERMISSION FROM THE HOSPITAL ETHICS GROUP TO 90**

CONDUCT THE RESEARCH
APPENDIX 13 PRETEST DATA 92
APPENDIX 14 POST-TEST DATA 93
APPENDIX 15 COMPARISON BETWEEN PRE-TEST AND POST-TEST DATA 94
APPENDIX 16 COMPARISONS BETWEEN THE NUMBERS OF ASSESSMENT- 96
BASED NURSING DIAGNOSES FORMULATED BY THE
PARTICIPANTS BOTH IN THE PRE-TEST AND POST-TEST
APPENDIX 17 DESCRIPTIVE STATISTICS 97
APPENDIX 18 HOSPITAL GROUP ETHICS CLEARANCE CERTIFICATE 99

## LIST OF FIGURES

### CHAPTER THREE

**Figure 3.1:** Representation of the paradigm for the pre-test, post-test intervention method…….....23

### CHAPTER FOUR

**Figure 4.1:** Pre-test data……..45

**Figure 4.2:** Post-test data……....48

**Figure 4.3:** Comparison between pre-test and post-test criteria……...51

**Figure 4.4:** Comparisons between the total numbers of assessment-based nursing diagnoses formulated by the participants in the pre-test and the post-test…….....51

**Figure 4.5:** Comparison between the mean, median and mode of the pre-test and the post-test……...53

## LIST OF TABLES

### CHAPTER THREE

**Table 3.1:** Research design validity……...20

**Table 3.2:** Validity of data collection……..……26

**Table 3.3:** Representation of the five criteria for assessment-based nursing diagnoses (actual)…….……30

**Table 3.4:** Validity of the criteria…….32

**Table 3.5:** Representation of the demographic data of the experts……..33

**Table 3.6:** Representation of the five assessment-based nursing diagnoses (actual) derived from the case study scenario……..37

### CHAPTER FOUR

**Table 4.1:** Demographics of the participants…….....44

**Table 4.2:** Pre-test Data (total number of criteria for all five diagnoses)……..46

**Table 4.3:** Post-test Data (total number of criteria for all five diagnoses)……49

# CHAPTER 1

# OVERVIEW OF THE STUDY

## 1.1 Introduction

Chapter 1 provided an overview of the study regarding the background, the motivation and rationale for delving into the study, the significance of the study, problem statement, research questions, purpose and objectives of the study, as well as the research design and method.

## 1.2 Background to the study

Private Healthcare institutions pride themselves on providing high quality patient care. In order to achieve this, patients' complaints and problems are being used to monitor quality assurance (Kuosmanen et al. 2008). According to Herdman (2011) "A nursing diagnosis provides a basis for the selection of nursing interventions to achieve outcomes for which nurses are accountable." "The aim of a nursing diagnosis is to provide appropriate nursing care to individual patients according to their condition and in turn providing quality care" (Herdman 2011). Previous studies affirm that there is a lack of assessment-based nursing diagnoses being made by nurses (Hefferin & Hunter 1975; De Moraes Lopes et al. 2010).

The North American Nursing Diagnosis Association hereafter referred to as NANDA was founded in 1982 for the purpose of standardizing nursing terminology. "The association develops research, disseminates and refines the nomenclature, criteria and taxonomy of nursing diagnoses" (NANDA 2015-2017). NANDA defines "nursing diagnoses as the identified actual or potential human responses to health conditions, life processes or vulnerability for that response" (NANDA 2015-2017). "The phrase human response, is important because while doctors diagnose health conditions, nurses diagnose human responses to health conditions, noting that different people respond differently to the same health conditions, thus requiring different nursing interventions" (NANDA 2015-2017). "Assigning a nursing diagnosis based on a medical diagnosis skips several essential steps to optimal and safe patient care" (NANDA 2015-2017). According to NANDA (2015-2017) an accurate nursing

diagnosis based on thorough assessment, results in more effective and safer patient care. Yilmaz, Sabanciogulari & Aldemir (2015:265-275) determined that the nursing process is an important tool for putting nursing knowledge into practice which increases the quality of nursing care.

“Assessment-based nursing diagnosis is important because patient assessment is an important nursing skill and provides the foundations for both initial and ongoing patient care. A comprehensive, holistic assessment is the first step of the nursing process and the assessment informs decisions on nursing diagnosis, planning, implementation and evaluation” (Berman et al. 2016:181). According to Hefferin & Hunter (1975) nursing care-plans reflected less than half the patient problems identified on patient histories. This will have a ripple effect and in turn diminish quality healthcare. From 1975 to date, the same oversights are being made as confirmed by De Moraes Lopes et al. (2010) which showed that most nurses failed to ascertain a proper history of the patient.

A nursing diagnosis forms part of the nurses’ training as well as their day to day nursing activities and yet as stated, was neither formulated adequately nor of a high quality. Nurses have a leadership responsibility involving professional practice, patient safety and positive patient outcomes. This starts with an initial assessment of the patient and continues throughout the patient’s stay in hospital, thus to improve the nurses’ ability to formulate a proper nursing diagnosis, intervention methods should be explored.

According to van Graan, Williams & Koen (2016) with recent developments in South Africa’s health and educational system, the country needs to produce independent critical thinkers who are able to question, weigh evidence and make informed decisions. Critical thinking and clinical reasoning are terms that describe the process by which nurses collect information, process it, reflect and come to an understanding about a patient’s problem thus contributing to the formulation of a proper assessment-based nursing diagnosis. van Graan et al. (2016) concluded that nurse educators could develop a teaching strategy that will promote clinical judgement that can help students develop their skills in nursing care. Based on the above findings, it would be beneficial to bridge the gap between theory and practice by developing and implementing a workshop on the formulation of assessment-based nursing

diagnoses. A study in Brazil evaluated the effectiveness of an empowerment workshop for self-care diabetes patients. It was effective in improving metabolic control of diabetes type two (Cortez et al. 2017). Implementation research that is effective can provide lessons to practitioners about the best way to run a great programme (MDRC 2018).

### 1.3 Motivation and rationale for the study

The researcher has been an educator at a private hospital group for the past six years. The researcher, along with educators, clinical facilitators and other members of the multidisciplinary team on observation of the nurses' diagnoses at a private hospital in Gauteng, verbalized that nurses assess patients, take their history but fail to document their problems. The nurses verbalized not having enough time to write up care plans or implement the nursing process due to shortage of staff and too many patients, as well as not having a clear understanding of the nursing process. The inadequacy of assessment-based nursing diagnoses was due to the inability of nurses to assess patients correctly. Thus, the development and implementation of a workshop will aim to improve the ability of nurses to assess patient's signs and symptoms, causative factors, laboratory results and problems in order to formulate assessment-based nursing diagnoses. This is a concern globally as in the study of De Moraes Lopes et al. (2010) showed that "only 48.5 % of studied reports of nurses were recorded as nursing diagnosis that were associated with the method of patient evaluation." Patient assessment is an important nursing skill and provides the foundations for both initial and ongoing patient care, thus it is crucial in order to formulate assessment-based nursing diagnoses.

This inspired the researcher to introduce an intervention which would explain the importance of the nursing diagnosis to the participants, as well as show them how much shorter the nursing diagnosis formulation could be if they used the NANDA nomenclature, as it groups several symptoms into one diagnosis. The intervention could also ensure that nurses carry out the nursing process correctly by proper assessment of the patients, which in turn would shortened the patient's length of stay and acuity level, thus having a positive impact on the nurses time management and quality of patient care.

## 1.4 Significance of the study

The overall significance of the study may lead to improvement in the nurse's ability to formulate assessment-based nursing diagnoses for which he or she is accountable and in turn yields positive results for quality, safe and holistic patient care. The effectiveness of the workshop may give nurses critical thinking skills to bridge the gap between theory and practice by introducing nurses to proper assessment of the patient's signs, symptoms and problems holistically, as well as integrating anatomy, physiology and pathophysiology to clinical practice in the formulation of a nursing diagnosis. Improvement in patient care reduces liability on the organization and ensures patients have a shorter length of stay and a quick speedy recovery which in turn decreases costs for the patient, hospital and medical aids. The hospital may benefit by providing specific individualized care to each patient, promoting an image of professionalism and expertise, thus increasing the influx of patients to their facility, as well as maintaining a good relationship with medical aids to ensure they are the preferred service provider.

## 1.5 Problem statement

The formulation of an assessment-based nursing diagnosis impacts on the quality of patient care. Nurses find the formulation of nursing diagnosis based on assessment problematic as evidenced by De Moraes Lopes et al. (2010) that recognizes there are deficits in assessing of patients signs and symptoms, causative factors, patient files and problems. This leads to failure in drawing up and implementing proper care plans. Even though there are standards of training in formulating assessment-based nursing diagnoses at a private hospital in Gauteng, it is a concern that nurses are still unable to formulate an appropriate assessment-based nursing diagnosis. By identifying the gaps in the knowledge of nurses in the formulation of assessment-based nursing diagnoses, a workshop can be developed as an intervention to address the above problem and ultimately improve patient care.

## 1.6 Research question

Would a workshop aimed at improving the ability of nurses to formulate assessment-based nursing diagnosis be effective?

## 1.7 Purpose and objectives of the study

To develop and implement a workshop that will improve the ability of nurses to assess patient's signs and symptoms, causative factors and problems in order to formulate an assessment-based nursing diagnosis.

## 1.8 Research design and method

In the study the researcher adopted a one group pre-test, post-test intervention design at a private hospital in Gauteng in order to examine the effectiveness of a workshop in improving the ability of nurses' to formulate an assessment-based nursing diagnosis. The research paradigm was quantitative as it measured the ability of participants before they receive the intervention and after the intervention, comparing the data to establish effectiveness of the workshop (Brink, van der Walt & van Rensburg 2016). The one group pre-test, post-test intervention study allowed the researcher to exercise control to decrease the possibility of error and thus increase the probability that the study's findings are accurate (Cresswell 2014:335).
A detailed description of the research design and method is discussed in chapter 3.

## 1.9 Definition of key concepts

- **Assessment-based nursing diagnosis is broken up into:**

  **Nursing assessment:**

  It is the way in which a nurse gathers and evaluates data about a client (individual, family or community). The assessment includes a physical examination, interviewing and observations. Assessment is also the first step in the nursing process (encyclopedia.com 2018). A nurse will develop a diagnostic statement based on data collected during the nursing assessment. The assessment process involves physically examining a patient. A nurse will monitor a patient's symptoms, such as nausea and measure vital signs such as pulse rate, temperature and blood pressure as well as oxygen saturation levels, just to mention a few. Nurses must often discuss with patients any non-obvious symptoms they may have, such as pain or vertigo, as well as patient history.

According to Berman et al. (2016:185) this is an important part of collecting the data necessary to develop a diagnosis. It may be necessary to perform a psychological or a social examination, depending on what field a nurse works in.

**Nursing diagnostic statement:**

"It is the formal, written documentation of a nursing diagnosis. It includes the label or diagnosis, the aetiology and the indicators. In the statement, the aetiology is preceded by the phrase, related to. The indicators are the assessment data that led to the diagnosis. They are preceded by the phrase, as evidenced by" (encyclopedia.com 2018).

- Actual nursing diagnosis:
  "Actual nursing diagnosis is a client problem at the time of the nursing assessment e.g. ineffective airway clearance related to accumulation of secretions in the lungs as evidenced by a productive cough. It is based on the presence of associated signs and symptoms" (Berman et al. 2016:202).

- **Nursing process:**

  "It is an individualized problem-solving approach to the nursing care of patients. It involves four stages: assessment (of the patient's problems), planning (how to resolve them), implementation (of the plans) and evaluation (of their success)" (encyclopedia.com 2018).

- **Holistic care:**

  It is characterized by the treatment of the whole person, taking into account mental and social factors, rather than just the symptoms of a disease.

- **Critical thinking:**

  A style of reasoning that involves a complex process of reflection and analysis.

- **Clinical practice:**

  It is the agreed-upon and customary means of delivering health care by doctors, nurses and other health professionals.

  (free dictionary.com 2018; oxforddictionaries.com 2018)

## 1.10 Outline of the research report

Chapter 1: Overview of the study.

Chapter 2: Comprises of a literature review in which the researcher will discuss what is known or unknown about the formulation of assessment-based nursing diagnosis.

Chapter 3: Discussion on the research methodology, design, population, sample and data collection.

Chapter 4: Discussion on the process of data analysis and the findings derived thereof.

Chapter 5: Consists of main findings, limitations, recommendations and conclusions of this study.

## 1.11 Summary

In this chapter a brief overview of the study including the following components i.e. the background, motivation for conducting the study, the significance, the problem statement, research question, purpose and objectives of the study, research design and methodology were given. In the next chapter, a literature review will provide insight into the importance of developing an intervention to assist nurses in formulating assessment-based nursing diagnoses.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Introduction

This chapter provides a review of the relevant literature on nursing diagnoses, patient assessment, critical thinking and clinical reasoning, and a workshop as a form of training. Assessment-based nursing diagnosis is dependent on understanding the nursing process. It is also reliant on critical thinking and clinical reasoning. Berman et al. (2016:170) defines clinical reasoning as a cognitive process that helps the nurse collect and analyse patient information and decide on the possible nursing interventions to improve the patient's holistic care. Clinical reasoning requires the integration of critical thinking in identifying the most beneficial nursing interventions that will improve the patient's condition. Lastly a workshop as a form of training is looked into, in order to include all of the above aspects.

Research suggests that the need theory formulated by Virginia Henderson emphasizes the importance of human needs as the central focus of nursing practice (Younas & Sommer 2015:443). According to Virginia Henderson's Need theory there are 14 components based on human needs that make up nursing care i.e. breathe normally, eliminate body waste, move and maintain desirable postures, sleep and rest, suitable clothing, maintain body temperature, protect integument, hygiene need, injury avoidance, communicate fears and needs, worship according to one's faith, work for a sense of accomplishment, participate in recreation and learn, and discover. The theory's design successfully encompasses the components of the nursing process. In addition it can help nurses collect reliable and valid data about the health status of a patient, which in turn enhances the quality of care provided to patients which the researcher aims to achieve (Younas & Sommer 2015:443).

Both Virginia Henderson's Need theory and NANDA'S nursing diagnosis consider a holistic approach to nursing care by assessing a patient's physiological, psychological, spiritual and social state (nursing-theory.org 2016). She might have assessed the needs based on her 14 components of basic nursing care but in

similarity to the researcher and NANDA she expressed the importance and necessity of assessment in order to provide quality patient care.

### 2.2 Assessment-based nursing diagnosis

Assessment-based nursing diagnosis is reliant on understanding the nursing process namely; the assessment phase, and the analysis and formulation phase. It is also dependant on critical thinking and clinical reasoning.

#### 2.2.1 The nursing process

Berman et al. (2016:181) explains that the nursing process is a step by step guide on how to plan and provide individualized patient care. It is done to identify the patient's health state and actual or potential care problems in order to formulate plans that will meet those needs. The national licensure examination for registered nurses (NCLEX) uses five phases for the nursing process namely: assessment, analysis, planning, implementation and evaluation. They are all interrelated, thus if inadequate data are obtained during assessing, then the nursing diagnosis will be incorrect and this will result in inaccurate planning, implementing and evaluating. The term assessment is important in formulating a nursing diagnosis and is the basis for the study. The study will focus on the first two phases of the nursing process that is assessment and analysis in order to form an actual nursing diagnosis.

Yilmaz et al. (2015:265-275) determined that research regarding the opinions of nursing students on the nursing process and their levels of proficiency in Turkey resulted in most of the students believing that the nursing process was necessary, but only half of them were able to formulate the nursing diagnoses. They concluded that instructors must use different teaching methods in order to develop critical thinking, in order for an increase in the number of nurses being able to formulate nursing diagnoses.

According to a study done locally by Mutshatshi et al. (2015:445-455) participants shared mixed experiences when implementing the nursing process in the wards. Registered nurses expressed that the implementation of the nursing process was

poor, due to it being time consuming, tiring, a lack of knowledge and shortage of staff.

#### 2.2.1.1 Assessment (The 1st phase of the nursing process)

A nursing assessment is the client's response to health problems and should be individually assessed. The registered nurse is responsible for collecting data including physical, functional, psychosocial, emotional, cognitive, cultural, age related, environmental, spiritual and economic assessments. Data collection includes the patient's past and current medical, surgical, social history and current problems. It can be objective i.e. signs detected by the nurse and can be evaluated against an acceptable standard, and subjective i.e. symptoms which are apparent to the patient affected and can be verified or described by the patient alone. A primary source of data is the client and secondary sources are family, supportive persons, health professionals, records, reports, physical examination, laboratory and diagnostic analysis (Berman et al. 2016:185-187).

A study in Kenya by Rakuom et al. (2016) stated that assessment is more than just the science of knowing a patient, the review of systems, laboratory results, vital signs and medications, but also involves knowing the patient as a whole, thus a holistic assessment.

Locally, Mutshatshi et al. (2015:445-455) suggested it was evident that there was incomplete initial assessments done by nurses resulting in challenges when formulating a nursing diagnosis. There is a necessity for routine in-service training and updates, orientation and induction programs for registered nurses.

Therefore the researcher felt it would good to explore methods to upgrade the knowledge of the nursing process and its implementation, specifically in regard to accurate assessment without which quality patient care cannot be implemented.

#### 2.2.1.2 Analysis and formulation of a nursing diagnosis (The 2nd phase of the nursing process)

Diagnosing is considered to be the second phase of the nursing process whereby nurses must use their critical thinking skills to analyse and interpret the patient's problems and data on assessment. Registered nurses are responsible for the formulation of nursing diagnosis after a thorough data collection (Berman et al. 2016:201).

Research on the use of nursing diagnoses revealed that it improved the quality of documented patient assessments, the quality of interventions and outcomes reached. It also revealed that if nurses did not report signs and symptoms and causative factors, it would lead to decrease in diagnostic accuracy (Muller-Staub et al. 2006:541-531). The recommendations were to encourage educational measures to improve diagnostic accuracy.

Rakuom et al. (2016) felt a nursing diagnosis is necessary because besides its contribution to quality patient care, it encourages nurse's knowledge, judgements and decision making skills on the needs of the patient regarding care.

There are four types of nursing diagnoses i.e. actual, potential, syndrome and health promotion. The study will focus on an actual nursing diagnosis. As previously mentioned "an actual nursing diagnosis is a client problem at the time of the nursing assessment e.g. impaired gaseous exchange and pain." "It is based on the presence of associated signs and symptoms" (Berman et al. 2016:202).

The nursing process relies on nurses to have higher order thinking skills which will enable them to perform assessments logically and accurately. These assessments are necessary in order to formulate assessment-based nursing diagnosis. This higher order of thinking includes two concepts namely; critical thinking and clinical reasoning.

## 2.3 Critical thinking and clinical reasoning

Internationally critical thinking is a concern whereby researchers found that much of the teaching on critical thinking focused on lists of things that nurses need to know and be able to do. The above made the concept of teaching it difficult for educators. At present researchers feel that “critical thinking and clinical reasoning” is a process and orientation of the mind including affective and cognitive domains of learning. So there is a need to move away from what we need to know, to being able to collect, interpret, analyse, synthesize and evaluate data (Cerullo & da Cruz 2010).

According to van Graan et al. (2016:33-45) the concept “clinical judgement is important in clinical decision making and can improve the care delivery in South Africa.” Thus in order to formulate proper nursing care, nurses need to be critical thinkers. The formulation of actual assessment-based nursing diagnosis stimulates critical thinking and clinical reasoning.

Critical thinking skills as mentioned earlier are interpreting, analysing, synthesizing and evaluating. They are applied in the care of patients through the framework known as the nursing process (NursingJournal.org 2018). The researcher concluded earlier that the first two phases of the nursing process i.e. assessment and analysis, are the foundation for the formulation of assessment-based nursing diagnosis thereby linking critical thinking to the formulation of assessment-based nursing diagnosis.

Berman et al. (2016:170) defines critical thinking as a high level of thinking that is intentional in order to define a client’s problem and review the evidence based practice that is available in caring for a patient, thereafter making choices on the delivery of care of the patient. An example of this is interpreting a patient’s blood results and realizing the blood glucose is abnormal, thereafter analysing the objective data i.e. the blood glucose level and the subjective data i.e. the patient feeling thirsty, and then deciding on a course of action. Based upon the three skills of critical thinking a nurse can then use clinical reasoning to determine what the problem is? These decisions are based upon sound reasoning for example when the nurse gives sound rationale for their conclusions and self-regulating when they are alert of their bias and improper assumptions (NursingJournal.org 2018).

Berman et al. (2016:170) defines clinical reasoning as a cognitive process that uses thought processes to collect and analyse patient information, decide on the importance of the information and choose possible nursing interventions to improve the patient's holistic care. Clinical reasoning requires the integration of critical thinking in identifying the most beneficial nursing interventions that will improve the patient's condition.

Critical thinking and clinical reasoning cannot be done in isolation and go part and parcel in the formulation of a nursing diagnosis. Critical thinking is necessary for the recognition of a client problem and provision of effective care and clinical reasoning. Critical thinking is a like a link between information and the actions (Berman et al. 2016:170). In practice this would mean assessing a patient's problem which is the first part of a nursing diagnosis and providing evidence the third part of the nursing diagnosis. Clinical reasoning in practice is the second part of the nursing diagnosis namely; what is causing the problem or the rationale.

From the above we can conclude that the practice of nursing care requires thought processes of critical thinking and clinical reasoning. The researcher looked at different models of training that could stimulate critical thinking.

### 2.4 A workshop as a training strategy

The teaching of an actual nursing diagnosis involves providing nurses with the skills and knowledge to make a judgement on a comprehensive nursing assessment and thereafter writing and carrying out appropriate individualized patient care (NANDA 2015-2017; Herdman 2011).

Berman et al. (2016:478-479) states that there are various training strategies which are chosen to suit a topic and also the participants needs that can enhance learning when teaching, like a lecture will be cognitive in that the teacher controls the content and pace, then discussions are affective and cognitive as it encourages participation by learners and interaction. There is also discovery which is cognitive and affective, whereby the teacher guides problem solving. Practice is also a form of training strategy which is psychomotor and permits hands on experience.

Research suggests that workshops can be of a short duration ranging from 45 minutes to a daylong of an educational program designed to introduce participants to practical skills, techniques or ideas which they can use when formulating nursing diagnoses. This will be crucial when getting the participants out of the field to attend the workshop; as it needs to be short but informative. As research suggests a feature of workshops is that it is usually made up of few participants like 6 to 15, allowing everyone some personal time to learn and the opportunity to be heard. This would be ideal as the groups will consist of less than 20 participants at a time. Workshops are designed for people who are working in the same profession or field; in this case it is the field of nursing. Workshops are often participatory, i.e. participants are active, both in that they influence the direction of the workshop and also in that they have a chance to practice the skills and knowledge taught to them. Although a workshop may end with giving the participants further reading, the presentation is meant to convey what it set out to do in the one session and this is ultimately the aim of the researcher (ctb.ku.edu 2019).

After looking at the various features of a workshop, the one day workshop as a form of training was chosen by the researcher as it will best suit the topic and participants needs. According to Lee (2005:640-647) nursing care plans have been seen as a structured approach to assessing, planning and implementing patient care and the challenge for most institutions is to help registered nurses create clarity on their understanding of nursing diagnoses, thus identifying patient problems and proposing appropriate care plans. The above study found that nurses match patient conditions to the specific nursing diagnoses, they are unfamiliar with the statement of related factors and use objective data to describe patient conditions. They also ignore nursing goals and check interventions without executing them. The findings revealed that using an educational programme to enhance the nurse's ability to use nursing diagnosis and explore the process of diagnostic reasoning would improve the quality of patient care (Lee 2005:640-647).

Research suggests that workshops as a form of training help participants take on a hands-on approach to immediately implementing the skills they have learnt and they provide insight into topics. Workshops can be tailored to address varying needs. Fatumo, Shome & Macintyre (2014) suggest that specialized workshops also play a significant role in fulfilling curricular gaps; therefore implementing workshops can be

highly effective. Arcinegas Calle et al. (2016) evidenced that a one-day workshop can produce a positive impact on the knowledge gained. Thus the above is another reason as to why the researcher decided on the implementation of a workshop to improve assessment-based nursing diagnoses.

Another study, which was done in Rwanda had a positive impact on increasing the HIV knowledge of participants after the workshop. The study proved that a post-test done immediately after a workshop can yield positive results, as in the pre-test evaluation the results showed 30.3% men and 35.4% women had comprehensive knowledge on HIV and in the post-test evaluation the results showed an increase of 63.3% in men and 62.2% in women on the knowledge gain (psi.org 2010).

### 2.4.1 The ADDIE Model

Developing a workshop involves using an instructional design model to provide structure and meaning to an instructional design problem. The ADDIE Model provides a flexible guideline for developing effective training and materials of instruction, thus it was used as a framework to guide the development of the workshop. The ADDIE Model is the most effective and efficient teaching design that ensures a learner achieves the goals of the training sessions, whilst still allowing for evaluation of the learners' needs. It includes designing and development of training materials and evaluation of the effectiveness of the training program using processes with specific measurable outcomes (Aldoobie 2015). It is a five phase instructional design model i.e. analysis, design, development, implementation and evaluation.

Education and training plays an important part in patient safety as concluded by the author of the following article. The author applied a well-established principle instructional systems design (ISD) using the ADDIE Model for the creation and use of instructional programs to make health care safer. The above research article presented the ADDIE method of ISD that can be used to improve instructional outcomes. While there are other ISD approaches in literature that are effective, the author found the ADDIE approach to instructional design extremely effective and was able to utilize the method in a variety of situations (Battles 2016).

A study in Taiwan used the ADDIE Model to assess nurse preceptor training needs assessment; the team of researchers developed a nurse preceptor centred training program which resulted in enhancement of the preceptor's clinical teaching behaviours and had a positive influence on the new graduate nurses. The new graduate nurses' evaluation was even better than the preceptor's self-evaluation (Lee et al. 2017:220-229).

The ADDIE model was used in a study to develop a nursing information system training programme for new graduate nurses. The ADDIE model allowed the program designer to take the new nurses needs and goals into consideration when producing the programme. This resulted in the trained new graduate nurses using the information system expeditiously (Lu, Cheng & Chan 2016).

### 2.5 Summary

Nurses need to be critical thinkers in order to be safe, competent, skilful practitioners. A workshop on the formulation of assessment-based nursing diagnosis will stimulate "critical thinking and clinical reasoning" when the registered nurse analyses the data and assesses the patient.

A literature review concludes with a summarization of the evidence on the research study topic and any gaps that might be present in the evidence to encourage the researcher's need to do the study (Polit & Beck 2017:111). In this case the researcher will try to address the theory practice gap by developing a workshop that will attempt to improve the ability of registered nurses in formulating assessment-based nursing diagnosis through proper holistic assessment of patients, accurate history taking and documenting of all their findings.

# CHAPTER 3

# RESEARCH METHOD

## 3.1 Introduction

The chapter incorporates the research setting, population and sampling, research design and methodology, data collection and data analysis as well as ethical considerations.

## 3.2 Research setting

A research setting is a specific place where data is collected (Brink et al. 2016:59). The study was conducted at a private hospital in Gauteng. The training room at the hospital was used to do the pre-test, workshop and post-test. Permission was granted by the relevant stakeholders to conduct the study at the said premises. It was suitable because it was acceptable and accessible for the participants, as well as cost effective. The research setting was beneficial to the study because in terms of the intervention protocol, the intervention procedure was done in the training room of the hospital away from the unit in which the participant works limiting disturbances and ensuring their work will not influence their formulation of assessment-based nursing diagnoses. The training room was also highly conducive for teaching and learning, as it was fully equipped with a white board, comfortable seating, air-conditioning, a projector and a screen (Brink et al. 2016:165; Polit & Beck 2017:613).

## 3.3 Population and sampling

The population is a group of individuals that meet the eligibility criteria that the researcher is interested in studying (Brink et al. 2016:13). According to Cresswell (2014:160) a target population is a group of individuals with some similar defining characteristics that the researcher can recognize and analyse. Sampling refers to the researcher's process of choosing the sample from a population in order to gather information regarding phenomena in such a way that it represents the population of interest (Brink et al. 2016:132).

Polit & Beck (2017:250) define sampling as the process of choosing cases to represent an entire population, to allow inferences about the population. A sample is a subset of population elements, which are smallest units about which data is gathered.

An accessible population is the collection of cases that fit designated criteria and are accessible for the study (Polit & Beck 2017:249). In this case the accessible target population are permanent registered nurses employed at a private hospital in Gauteng. The reason for choosing permanent staff is that they were likely to be around for the post-test and the reason for choosing registered nurses is that according to the South African Nursing Council (SANC), the scope of practice of enrolled nurses R2598 chapter 5 (a) states that enrolled nurses will carry out nursing care to fulfil the health needs of a patient or group of patients under the supervision of a registered nurse. Thus only a registered nurse can diagnose a health need and prescribe, provide and execute nursing regimen (SANC 2018).

The total population N=46 permanent registered nurses was used in the pre-test phase, thus the sample population is n=46 working at a private hospital in Gauteng. Due to attrition a total of 10 participants dropped off in the post-test phase thus the post-test study population was n=36 permanent registered nurses.

**Inclusion criteria:** All registered nurses permanently employed at the private hospital in Gauteng that were willing and able to sign consent to participate in the research. The total number of subjects that met the inclusion criteria was N=46 registered nurses.

**Exclusion criteria:** Any registered nurses that were not involved in the formulation of care plans and thus nursing diagnosis, such as unit managers and theatre nurses. The demographics of the participants are illustrated in table 4.1 in Chapter 4.

### 3.4 Research method and design

According to Brink et al. (2016:96) a research design stems directly from a research question. The study's research question asks: Would a workshop aimed at improving the ability of nurses to formulate assessment-based nursing diagnosis be effective?

A research design is a set of systematic steps taken by the researcher to answer the research question, in doing so the researcher chose a research design that is the most appropriate in order to maximize the validity of the study.

A quantitative approach was utilized for this study adopting a one group pre-test, post-test, quasi-experimental design (intervention). Quantitative research personifies investigations where the relative data is examined in terms of numbers that may be quantified and summarized. Quantitative research is beneficial in that the numbers provide a greater precision in reporting results (Fox & Bayat 2010:77).

### 3.4.1 Validity of the research design

According to Polit & Beck (2017:198) the pre-test, post-test design provides a weak support for causal inference as it is vulnerable to threats like maturation and history, instrumentation and the Hawthorne effect. Table 3.1 explains validity of the research design by describing the limitations to the study and how the researcher overcame them.

**Table 3.1 Research design validity**

| **Possible limitations identified by researcher** | **Methods to overcome the limitations** |
|---|---|
| • History- this refers to the events that can occur during the research between the pre-test and post-test. | • Threat to history was kept to a minimum by doing the post-test a month after the pre-test and ensuring no other training was done on nursing diagnosis at the hospital. |
| • Maturation- changes occurring in participants over time e.g. | |

| | |
|---|---|
| intellectual growth and mastering of new skills. The longer the experimental intervention the more difficult to rule out the effects. | • Threat to maturation was kept to a minimum by doing the post-test a month after the pre-test.<br><br>• To get an accurate comparison of the pre-test and post-test data it was advisable to do the post-test directly after the workshop which was done. |
| • Testing- prior exposure to a test can bias a participants' response. This can be counteracted by reducing the number of times the test was given and giving a shorter test to reduce fatigue. | • This was counteracted by using the test only twice for the pre-test and the post-test.<br>It was also a short test thus reducing fatigue. |
| • Criteria validity- Criteria can present a threat to validity particularly when criteria changes over time. | • The same criteria were used for the pre-test and post-test thus the criteria threat was kept to a minimum. The criteria were appropriate in measuring change and could determine the differences between the pre-test and post-test group. |
| • Mortality- Frequently participants drop out of a study during the data collection process. Mortality is more of a problem when there is a control group comparison as | • This was avoided as only 21.7% of participants dropped off. It was a one group pre-test, post-test comparison group. The comparison was done via |

| | |
|---|---|
| it then becomes difficult to draw a comparison between the experimental group and the control group. | percentages giving an accurate quantitative value to compare both sets of data. |
| • Selection bias- It can happen when there are differences that exist in the way participants are recruited for a study and assigned to groups. It is important to ensure that the participants in the intervention groups are as similar as possible. | • This was avoided by using the same population i.e. registered nurses for the pre-test and the post-test. The total population was used. |

The limitations listed above are published in Brink and Cresswell and are common occurrences in a pre-test, post-test design, thus methods in which to overcome them, in reference to this particular study were explained above.

(Brink et al. 2016:109-111; Cresswell 2014:335)

### 3.4.2 Characteristics and contributions of the one group pre-test, post-test research design

A one group pre-test, post-test design is when participants are studied before and after the experimental intervention. This means the researcher tested them before doing the workshop (intervention), and then presented the workshop and tested them after, to see if there were any changes ( Polit & Beck 2017:194). The participants were given the pre-test and asked to formulate assessment-based nursing diagnoses from the case study scenario (Appendix 1).

The pre-test, post-test design provides a weak support for causal inference as it is vulnerable to threats to internal validity. Internal validity refers to the extent to which

outcomes of an intervention can be attributed to the manipulated, independent variable rather than to uncontrolled extraneous factors (Brink et al. 2016:109). These threats were explained and shown how they were overcome in table 3.1. According to Polit & Beck (2017:202-203) the strengths of the quasi-experimental design is that it is practical as it may be impossible to conduct true experimental tests of nursing interventions. In a pre-test, post-test research design certain variables are manoeuvred, i.e. manipulated or changed to enable the researcher to observe the effect of the manoeuvring on the other variables in an objective, precise and a scientifically responsible manner. In the research, the aspect being investigated is the ability of the nurses in formulating assessment-based nursing diagnoses and the manoeuvring, is in the form of a workshop. Variables are categorized according to their relationship with each other (Cresswell 2014:323).

**There are two variables:**

**Independent variable -** This is the aspect (element) that is being investigated, it is the cause and may also be regarded as the treatment which is the ability of nurses to formulate assessment-based nursing diagnoses.

**Dependent variable -** This is the differentia with which the independent variable is being evaluated. The dependent variable is the intervention i.e. the workshop and may also be regarded as the result of the workshop (Cresswell 2014:324). Brink et al. (2016:89-90) suggests that in order to understand the pre-test, post-test intervention design the following notations are used to denote specific parts of the design: X represents a manipulation of the independent variable so that the result of these variables on the dependent variables may be applied. Y represents the dependent variable. To determine the result of manipulation, researchers have to determine the condition of certain properties at certain times. These properties are the dependent variables.

| | | | | |
|---|---|---|---|---|
| Y1 | ↔ | X | ↔ | Y2 |
| ↓ | | | | ↓ |
| Dependent variable | | Independent variable | | Dependent variable |

**Figure 3.1** Representation of the paradigm for the pre-test, post-test intervention method

Thus according to Figure 3.1 Y1 is the pre-test results, X the intervention and Y2 the post-test results.

The one group pre-test, post-test quasi-experimental research design best suited the research as the focus of intervention was on change e.g. behaviour (Polit & Beck 2017:194). The design aimed to answer the research question i.e. would a workshop aimed at improving the ability of nurses to formulate assessment-based nursing diagnosis be effective? In a one group pre-test, post-test design, the dependent variable is measured once before the treatment is implemented and once after it is implemented. The comparison between the pre-test and post-test scores will draw a conclusion as to whether the intervention was effective or not?

### 3.5 Data collection

Data collection in quantitative studies is often carried out according to a pre-established plan. It involves the collecting of information to address a research problem (Polit & Beck 2017:57,725). The researcher's plan was to do a pre-test to get an analysis of the extent of the problem and how to help rectify the problem. These results would then be shared with the expert team and together with their suggestions and the researcher's input; a workshop would be drawn up as an intervention. Directly after the intervention the post-test was to be done and data would be analysed once more. Thereafter a comparison between the pre-test and post-test data will to be done in order to see if the workshop had an impact or not. The plan was executed as envisioned above. Data was collected only during step: 1 the pre-test and step: 3 the post-test and not during step: 2 the intervention.

#### Step 1: The pre-test

A case study scenario Appendix 1 was given to participants. They were given time to identify and formulate assessment-based nursing diagnoses from the case study scenario (actual). They were instructed by the researcher to read the scenario and identify and formulate as many actual nursing diagnoses they could. They were given

an information letter requesting their consent, containing information about the purpose, data collection process, methodology and how confidentiality and anonymity would be maintained. They were given an opportunity to ask questions regarding what was expected of them in the pre-test. The pre-test was done in the hospital training room ensuring allocated time for staff to attend and cost effectiveness. The pre-test was presented on the following dates i.e. the 30th and 31st of July 2018 and the 1st of August 2018 to accommodate the staff on different shifts. Registered nurses in groups of +- 20 attended the pre-test session at a time. Data was then collected and analysed by the researcher together with the supervisor using the criteria in Appendix 2 and the assessment-based nursing diagnoses in Appendix 3. The numbers of correct nursing diagnoses formulated by each participant were recorded. In order for the nursing diagnoses formulated by the participants to be correct, it had to include all five criteria listed in Appendix 2 and the nursing diagnoses listed in Appendix 3. The participants' nursing diagnoses may differ in minor wording to that of Appendix 3, but it is necessary that they have the same important problems, sign and symptoms and causative factors listed in Appendix 3. Each nursing diagnosis formulated by the participant was then examined, to see what criteria were included and what criteria were excluded and this data was also recorded.

**Step 2: The intervention**

The data extracted from the pre-test see Appendix 4 was then used by the researcher to assess gaps in the ability of nurses formulating assessment-based nursing diagnoses. The pre-test data was also shared with the experts' in order for them to provide objectives and study material for inclusion in the workshop.

The intervention was then developed using the ADDIE Model and presented by the researcher in the form of a workshop. It was presented a month after the pre-test, leaving time for analysis and drawing up of the workshop. It was done on the following dates i.e. the 27th of August 2018, 3rd, 10th and 17th of September 2018. The training room of the hospital was used for the workshop.

**Step 3: The post-test**

On completion of the workshop a post-test was done immediately after, using the same case study scenario, criteria and assessment-based nursing diagnoses that were used in the pre-test to evaluate the effectiveness of the workshop. It was presented on the following dates i.e. the 27th of August 2018, 3rd, 10th and 17th of September 2018.The groups consisted of +- 20 participants. Those who were scheduled to work and could not make a session could attend another session the following week Monday, ensuring that most of the registered nurses attended the workshop which was at their own will.

### 3.5.1 Validity of the data collection process

There are many sources of error in data collection. The most common are those caused by participant and the environment. Table 3.2 explains validity of the data collection by describing the limitations and how the researcher overcame them (Brink et al. 2016:164).

**Table 3.2 Validity of the data collection process**

| **Possible limitations identified by researcher** | **Methods to overcome the limitations** |
|---|---|
| • Participant factors- They do not understand what is required of them. | • The researcher gave out the scenario and answer sheet (Appendix1) to be filled in and provided clarity to participants as to what was required of them. |
| • Participant anxiety on being tested- Will it affect their employment status and will management know their results? | • An information letter and consent (Appendix 5) explaining the purpose, data collection process, methodology of the study, how confidentiality and anonymity would be maintained, was given |

| | |
|---|---|
| | to participants by the researcher. It stipulated the following; that on completion of the workshop, their capability of identifying and formulating assessment-based nursing diagnoses will be evaluated. The study will not influence their current employment status. They were assured that their name and personal information will not be disclosed and all their information will be kept confidential. They were also given the opportunity to ask questions and were told that their participation is voluntary and that they could withdraw at any time, without giving any reason. |
| • Environment – lighting, temperature, noise and interruption must be a minimum. | • In terms of the intervention protocol, the intervention procedure was done in the training room of the hospital away from the unit in which the participant works, ensuring their work will not influence their formulation of assessment-based nursing diagnoses (Brink et al. 2016:165).<br><br>• It was noise free and equipped with a white board, comfortable seating, air-conditioning, a |

| | |
|---|---|
| | projector and a screen which made it conducive for the study. |
| • Prevent sharing of information of the workshop with other participants. | • The assessment-based nursing diagnosis to be formulated was dependent on the case study scenario. Since all the learning material including the case study scenario, pre-test and post-test used did not leave the room, the reliability of the study was maintained.<br><br>• Participants also signed a confidentiality clause preventing them from discussing the contents of the intervention, pre-test and post-test with other participants. |

(Brink et al. 2016:164)

### 3.6 The criteria

The criteria and suggestions listed minimizing diagnostic error in Kozier & Erb's fundamentals of nursing (Berman et al. 2016: 210) were used to draw up the five criteria. Table 3.3 illustrates the five criteria a nursing diagnosis must fit, in order to be assessment-based (actual).The criteria addressed issues raised by the researcher along with educators, clinical facilitators and other members of the multidisciplinary team. The criteria were then formatted as a checklist (Appendix 2).

Appendix 6 was used to get the expert's feedback regarding the criteria listed in table 3.3 and the aspects they felt nurses are failing to include in the formulation of assessment based-nursing diagnosis prior to the pre-test.

The criteria were agreed upon, as they exhibited construct validity and measured what they were supposed to according to the experts. They also included content validity, in that they represented all components of the variable being measured which was assessment-based nursing diagnoses.

The experts stipulated that the criteria tested critical thinking and application of knowledge, that it was comprehensive towards assessing and measuring the formulation of assessment based-nursing diagnosis and it allowed for collaboration and explanation of information, hence the use of the correct terminology.

The aspects the experts felt were left out by registered nurses in formulating assessment-based nursing diagnosis were as follows; not formulating a nursing diagnosis at all. If they did formulate a nursing diagnosis, they left out anatomy, physiology, pathophysiology, nursing terminology, pharmacology, subjective and objective data and understanding thereof.

The experts confirmed that their concerns above were addressed in the criteria, thus they were satisfied with the checklist and its importance, as it measured assessment-based nursing diagnoses by ensuring the actual nursing diagnoses were composed of three parts namely;

- A problem statement which describes the client's health problem or response for which nursing therapy is given e.g. deficient fluid volume, this is in line with;
  Criterion 1 i.e. the diagnosis is stated in terms of a problem not a need.
  Criterion 3 i.e. the diagnosis is correct if it uses nursing terminology, rather than medical terminology.
  Criterion 4 i.e. it reflects a good knowledge base of chemistry, anatomy, physiology, pathophysiology or pharmacology and clinical experience on behalf of the nurse.
  Criterion 5 i.e. the diagnosis is correct if it reflects the nurse having a working knowledge of what is normal e.g. temperature readings.

- Related to or due to: what is causing it / related factors e.g. impaired skin integrity due to immobility, this is in line with criterion 2 i.e. the diagnosis is correct if both elements of the statements do not say the same thing. Nurses will often write impaired skin integrity related to ulceration of the sacral area. This is incorrect.

- And evidenced by: data / observations / defining characteristics / signs and symptoms (NANDA 2013). This is in line with criterion 4. If a nurse has no knowledge base, she or he will not be able to provide evidence for their problem. This was a key issue brought about by the experts as they felt its inclusion was imperative. It is also in line with criterion 5.

**Table 3.3 Representation of the five criteria for assessment-based nursing (actual)**

| The number of the criterion | Explanation of the criteria |
|---|---|
| Criterion 1 | the diagnosis stated in terms of a problem not a need<br><br>(e.g. Deficient fluid volume)<br><br>rather than<br><br>(e.g. Fluid replacement) |
| Criterion 2 | the diagnosis is correct if both elements of the statements do not say the same thing i.e. the response and probable cause are the same thing |

| | |
|---|---|
| | (e.g. Impaired skin integrity related to immobility)<br><br>rather than<br><br>(e.g. Impaired skin integrity related to ulceration of sacral area) |
| Criterion 3 | the diagnosis is correct if it uses nursing terminology rather than medical terminology to describe the client's response<br><br>(e.g. Ineffective airway clearance related to accumulation of<br><br>secretions in lungs)<br><br>rather than<br><br>(e.g. Ineffective airway clearance related to pneumonia) |
| Criterion 4 | the diagnosis is correct if it reflects a good knowledge base of chemistry, anatomy, physiology, pathophysiology or pharmacology and clinical experience on behalf of the nurse<br><br>(e.g. Elevated blood glucose due to the inability of the pancreas to control blood glucose levels as evidenced by a GM reading of 20mmol/hg). The above statement confirms the nurse knows the anatomy and pathophysiology regarding diabetes mellitus.<br><br>rather than<br><br>(e.g. Elevated blood glucose due to diabetes mellitus) |

| | |
|---|---|
| Criterion 5 | the diagnosis is correct if it reflects the nurse having a working knowledge of what is normal<br><br>(e.g. Hyperthermia related to urinary tract infection as evidenced by a temperature of 39.4°c or leukocytes in the urine or crp of 165) |

### 3.6.1 Validity of the criteria

Table 3.4 illustrates validity of the criteria by describing the limitations and how the researcher overcame them.

**Table 3.4 Validity of the criteria**

| **Possible limitations identified by researcher** | **Methods to overcome the limitations** |
|---|---|
| • Content validity- evaluates the criteria in terms of relevance to the target population. | The criteria were comprehensive in testing proper formulation of assessment-based nursing diagnosis as confirmed by the experts and was given to the experts prior to usage in the pre-test. |
| • Face validity- the criteria measures what it is supposed to. | |

| | |
|---|---|
| | • Experts confirmed the criteria measured what it was supposed to. |
| • Criterion-related validity is when the criterion is considered an ideal measure of construct | • Experts felt it tested all aspects missing from assessment-based nursing diagnosis. |

### 3.7 The Experts

Experts are people who have an intuitive grasp of nursing education. An expert operates from a deep understanding of the total situation. His / her performance becomes fluid, flexible and highly proficient. They are considered experts because evidence assumes that some individuals because of cumulative experience and clinical expertise are considered to have extensive knowledge or skill in a particular sphere (Polit & Beck 2017:641). Table 3.5 illustrates the demographic data of the experts.

**Table 3.5 Representation of the demographic data of the experts**

| (Registered nurses) Expert number | Years of experience in nursing | Highest qualification | Position held | Role in nursing diagnosis |
|---|---|---|---|---|
| 1 | 28 years | MA Cur health science | Head educator | Practicing in the field of nursing education and training. Does examination, |

| | | | | |
|---|---|---|---|---|
| | | | | assessment and moderation of assessment-based nursing diagnosis formulation. |
| 2 | 19 years | B Cur (ed et admin) | Clinical facilitator | Practicing in the field of nursing education and training.<br>Does examination, assessment and moderation of assessment-based nursing diagnosis formulation.<br>Ongoing training of nurses in practice on nursing care plans. |
| 3 | 23 years | MA Cur health sciences | ICU Educator | Practicing in the field of nursing education and training. |

| | | | | |
|---|---|---|---|---|
| | | | | Does examination, assessment and moderation of assessment-based nursing diagnosis formulation.<br>Ongoing training of nurses in the ward on nursing diagnosis formulation.<br>Does IGNS and nursing diagnosis formulation for certain systems.<br>Teaches anatomy, physiology and pathophysiology of certain systems as well as pharmacology. |
| 4 | 24 years | B Cur (ed et admin) | Learning and development facilitator | Practicing in the field of nursing education and training.<br>Does examination, assessment and |

| | | | | |
|---|---|---|---|---|
| | | | | moderation of assessment-based nursing diagnosis formulation. Ongoing training of nurses in the ward on nursing diagnosis formulation. |

### 3.8 The assessment based-nursing diagnoses and the case study scenario

The case study scenario see Appendix 1 was drawn up by the researcher who is an experienced educator from case studies in the book titled 'Critical thinking cases in nursing' (Harding et al. 2013:83-147). The researcher sought assistance from the ICU expert in providing the treatment regimen for a pneumonia patient who was also diabetic and hypertensive (the case study patient).

The assessment-based nursing diagnoses in table 3.6 are examples of the type of nursing diagnoses that should be formulated from the scenario. Participants' nursing diagnoses may differ slightly in the wording or phrasing to that of table 3.6, but they should be marked correct if they have the same important problems, sign and symptoms and causative factors listed in table 3.6 and if they adhere to the criteria listed in table 3.3. The assessment-based nursing diagnoses were formulated using NANDA literature which states that an actual nursing diagnosis must include three parts i.e.

- A problem statement which describes the client's health problem or response for which nursing therapy is given. Qualifiers can be used to describe the patient's problem e.g. deficient, impaired / imbalanced, ineffective, decreased, compromised or altered.

- Related to or due to: what is causing it / related factors

- And evidenced by: data / observations / defining characteristics / signs and symptoms (NANDA 2013).

Thus the assessment-based nursing diagnoses formulated by the researcher adhered to both NANDA'S criteria and those criteria listed and published in Kozier & Erb's fundamentals of nursing (Berman et al. 2016:210).

Table 3.6 illustrates the five assessment-based nursing diagnoses that are identified and formulated from the scenario. The researcher used this together with the criteria in table 3.3 to evaluate the ability of nurses in formulating assessment-based nursing diagnoses.

**Table 3.6 Representation of the five assessment-based nursing diagnoses (actual) derived from the case study scenario**

| The number of the nursing diagnosis | The nursing diagnoses formulated from the scenario |
|---|---|
| Diagnosis 1 | Elevated / Raised / **Altered body temperature** / Hyperthermia related to chest / lung infection as evidenced by a temperature of 39.4°c or shaking chills (rigours) or CRP of 165. |
| Diagnosis 2 | Productive cough / **ineffective airway clearance** related to accumulation of secretions in the lungs as evidenced by crackles in the left upper lobe or rust coloured sputum **or** **ineffective airway clearance** related to accumulation of secretions in the lungs as evidenced by a cough |

| | |
|---|---|
| | |
| Diagnosis 3 | Shortness of breath / **ineffective breathing pattern** / altered breathing pattern related to accumulation of secretions in the lungs / inflammation of the lungs as evidenced by decreased oxygen saturation level of 84% on room air or decreased breath sounds |
| Diagnosis 4 | Altered / Raised / Elevated blood pressure related to impaired respiratory function / respiratory distress as evidenced by a blood pressure of 160/100 mmHg **or**<br>**Reduced cardiac output** due to increased peripheral vascular resistance secondary to hypertension as evidenced by a blood pressure of 160/100 mmHg. |
| Diagnosis 5 | Altered / Elevated blood glucose / **imbalanced nutrition levels** / fluid and electrolyte imbalance related to the inability of the pancreas to control blood glucose levels/ insulin deficiency as evidenced by GM reading of 14mmol/hg. |

NB: The diagnoses above were formulated using NANDA literature -The bold writing is qualifiers used by NANDA (NANDA 2013).

### 3.9 The intervention

The workshop was developed by the researcher from data extracted from the pre-test along with suggestions for objectives and study material to be included in the workshop by the expert group.

The formulation of the workshop used the ADDIE five phase process of developing instructional material:

**Phase 1: Analyse**

The problem was that nurses were unable to formulate assessment-based nursing diagnoses. The researcher planned to address the above by developing and implementing a workshop to improve the ability of nurses to assess patient's signs and symptoms, causative factors and problems in order to formulate an assessment-based nursing diagnosis.
The researcher along with suggestions from the expert group and the analysed data extracted from the pre-test was able to understand the level of the participants pre-existing knowledge, their skills and abilities, as well as their training needs.

**Phase 2: Design**

From the data extraction and analysis in Phase 1, the educator together with input from the expert team developed the following objectives for the workshop:

- Define and understand the importance of assessment-based nursing diagnosis.

- Differentiate between subjective and objective data (Assess the different sources of data)

- To understand, implement and formulate assessment-based nursing diagnoses based on the five criteria taught.

See Appendix 4 the letter requesting input from the experts for inclusion in the workshop.

**Phase 3: Develop**

The content of the workshop focused on addressing the objectives. See Appendix 7 for the lesson plan.

**Phase 4: Implement**

The workshop was then presented by the researcher on the dates mentioned previously.

**Phase 5: Evaluate**

An evaluation of the effectiveness of the workshop on improving assessment-based nursing diagnosis (actual) was done by doing the post-test directly after the workshop and comparing the pre-test data to the post-test data.
In terms of the participants, they were also given a generic feedback form to fill in after the workshop. See Appendix 8, an example of the participant feedback form. It was voluntary, thus it was not filled in by every participant. The general feedback received about the workshop will be provided in chapter 4.

### 3.10 Data Analysis

According to Cresswell (2014:203-204) data analysis is done to answer the research question. It was done in two steps i.e. the pre-test and post-test. The results of the pre-test helped the researcher determine gaps in the ability of nurses in identifying and formulating assessment-based nursing diagnoses (Appendix 4). Assessment as to whether the participants have included the five criteria in formulation of their nursing diagnoses was determined. It also notated the number of assessment-based nursing diagnoses formulated by the participants in comparison to those of the researcher. The same criteria were used in the post-test. The researcher and the supervisor took on the role of a moderator and reviewed the data extracted from the pre-test and post-test and interpreted it. The pre-test data was used to ensure all gaps identified in the formulation of assessment-based nursing diagnosis were addressed in the workshop.

Data was recorded on an Excel spread sheet and the descriptive statistics were reported on. When analysing quantitative data the most powerful tool available is statistics. According to Brink et al. (2016:179) descriptive statistics were used as it summarizes and describes data. The numerical data was collected, displayed and analysed scientifically, and from which logical decisions, conclusions and recommendations were made. The descriptive analysis included measures of central tendency i.e. the mean, mode and standard deviation which will be discussed further in chapter 4 (Brink et al. 2016:177,178).

### 3.11 Validity and reliability

A quantitative study is good in explaining cause and effect relationships between variables. Validity is supported by selecting the population according to pre-specified inclusion and exclusion criteria which was done. The same criteria was used in the pre-test and post-test thereby removing the threat to internal validity of the intervention (Cresswell 2014:332,335).

Missing elements (gaps) in the formulation of assessment-based nursing diagnoses are identified by using the criteria listed and suggestions minimizing diagnostic error which has been published in Kozier & Erb's fundamentals of nursing (Berman et al. 2016). The criterion measures the competence level of nurses in identifying and formulating assessment-based nursing diagnosis.

Rigour refers to the principles of truth value of research outcome. The researcher and the moderator collected the data in a systematic, objective and thorough manner, and analysed and interpreted it in such a way that there was minimum contamination and thus enhanced accuracy of the research. A detailed and meticulous record of data was kept (Brink et al. 2016:97). The supervisor co-checked the data to ensure accuracy and inclusiveness.

Literature states that a post-test knowledge data collected immediately after an intervention, maybe reasonable to infer that the intervention is the most plausible explanation for knowledge gains (Polit & Beck 2017:200). Therefore doing the post-test directly after the workshop reduced the threat to history, as a month after the

intervention external events can affect the formulation of assessment-based nursing diagnoses.

Validity was also discussed in more detail in tables 3.1, 3.2 and 3.4.

### 3.12 Ethical considerations

Before commencing with the study permission was sought from the following parties:

- The Human Research Ethics committee of the faculty of health sciences, post graduate assessors committee and the University of Witwatersrand (Appendix 9).

- The hospital manager, the nursing services manager and the ethical research committee of the private hospital received a cover letter with the aims and objectives of the study (Appendices 10, 11, 12).

- The participants were given a consent form to fill in that stipulates their participation is of their own free will and if they wish to withdraw at any stage during the research it will be taken with no prejudice (Appendix 5).

Data was collected in a non-maleficence manner by identifying what were the levels of competency of nurses in identifying and formulating assessment-based nursing diagnoses and not who had made mistakes. The researcher maintained anonymity and confidentiality as all the documentation, participants' names and information will only be known to the researcher and the supervisor. Anonymity means no personal information of the participants will be divulged (Appendix 5). Confidentiality of the participants was maintained by allocating numbers rather than participants' names.

### 3.13 Summary

In this chapter, the research design and methods were explored and explained. This included a description of the research setting, population, sampling, sampling size, data collection, data analysis, reliability and validity and ethical considerations for the study.

In the chapter to follow findings of the study will be presented and discussed.

## CHAPTER 4

## PRESENTATION AND DISCUSSION OF FINDINGS

### 4.1 Introduction

This chapter focuses on the analysis and interpretation of data in order to answer the research question i.e. would a workshop aimed at improving the ability of nurses to formulate assessment-based nursing diagnosis be effective? Various histograms and tables are available to display the interval data in the study.

### 4.2 Study population demographics

The table 4.1 illustrates the total study populations gender and average age.

**Table 4.1 Demographics of the participants**

| Data collection steps | Number of participants | Gender | Average age |
|---|---|---|---|
| Pre-test | 46 | 45 Females 1 Male | 41 |
| Post-test | 36 | 35 Females 1 Male | 41 |

#### 4.2.1 Participants' feedback regarding the workshop

The participant feedback form Annexure 8 was voluntary, thus it was not filled in by every participant**.** The general feedback received about the workshop was that it was; excellent by 18 participants and good by 13 participants out of the 31 that filled in the feedback. The comments received were as follows;
It would be good to have more scenarios in the future to improve the understanding of all nursing diagnoses. It would be beneficial to have more clinical contact sessions for assessment and evaluation of nursing diagnoses. The facilitator did her best and was very informative, but I felt like I needed more in-depth knowledge into understanding the nursing process from my side. It would be great to have more time allocated in the future on nursing diagnoses and more workshops. It would be nice to have a session on potential nursing diagnosis. The session was interesting in terms of learning about nursing diagnosis. The facilitator was well prepared and organized. The workshop was helpful in improving my skills and made me more knowledgeable.

### 4.3 Data analysis and interpretation

The results of the pre-test and post-test are discussed, as well as the comparison between them. The data results discussed in this chapter revealed the total number of assessment-based nursing diagnoses identified and formulated, as well as the number of criteria adhered to by the participants in the pre-test and post-test.

#### 4.3.1 Pre-test data analysis

The pre-test data was captured, tabulated and interpreted.
The explanations of each criteria and diagnoses have been provided in table 3.3 and table 3.6.

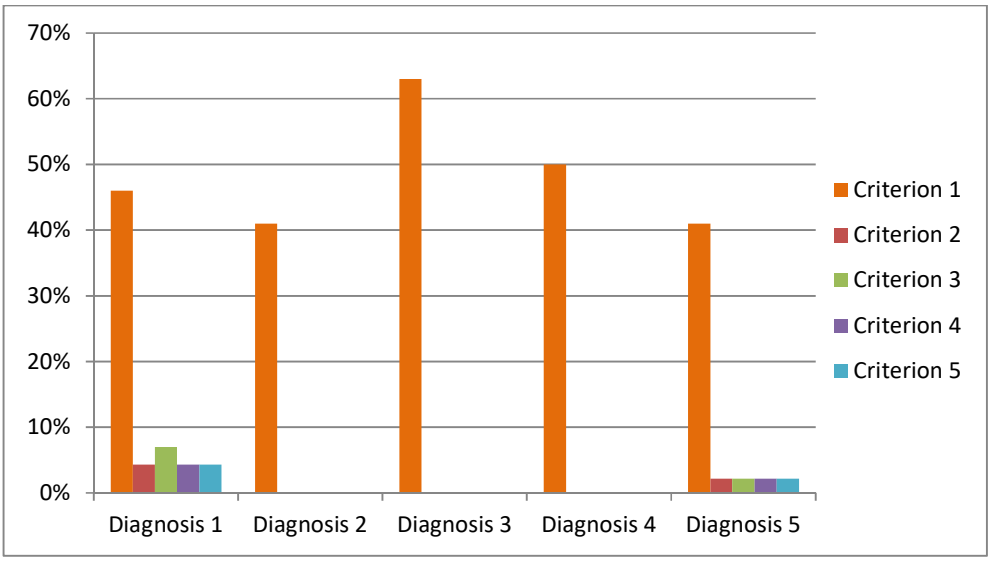



**Figure 4.1** Pre-test Data

Figure 4.1 is representative of the pre-test data scores for each diagnosis and each criterion. Appendix 13 has the statistics for the above graph.

Table 4.2 is representative of the total number of criteria that was identified by the participants for all five diagnoses in the pre-test. Participants were able to meet all criteria for diagnosis one and five.

**Table 4.2 Pre-test Data (total number of criteria for all five diagnoses)**

| Pre-test Data | | | | | |
|---|---|---|---|---|---|
| Participants N= 46 | The total percentage of **Criterion1** identified in all 5 diagnoses<br><br>Total = 48% | The total percentage of **Criterion 2** identified in all 5 diagnoses<br><br>Total = 1.3 % | The total percentage of **Criterion 3** identified in all 5 diagnoses<br><br>Total= 1.7% | The total percentage of **Criterion 4** identified in all 5 diagnoses<br><br>Total= 1.3 % | The total percentage of **Criterion 5** identified in all 5 diagnoses<br><br>Total= 1.3 |

By looking at figure 4.1 and table 4.2 we can conclude the following:

48% of participants were able to identify criterion 1 for all 5 assessment-based nursing diagnoses, indicating that they have an understanding of stating the nursing diagnosis in terms of a problem and not a need, however it is still less than 50% that were able to list criteria 1 for all 5 diagnoses thus emphasizing the need for inclusion of criterion 1 in the workshop. A score of 50 % percent demonstrates a basic level of competence.

Less than 2 % of participants were able to identify or list criteria 2, 3, 4 and 5 for all five nursing diagnoses.

After the pre-test data analysis, the researcher together with the experts was able to deduce the following:

There is definite lack of knowledge that an actual assessment-based nursing diagnosis has 3 parts.

They use medical terminology to describe the client's response or didn't write much, emphasizing that they do not understand the importance of nursing diagnosis or are unable to formulate it.

They have a limited knowledge base of chemistry, anatomy, physiology, pathophysiology or pharmacology.

Some participants have no working knowledge of what is normal e.g. blood results.

Some participants provided medical history, subjective and objective data thus not understanding what a nursing diagnosis is.

Some participants provided nursing interventions rather than a nursing diagnosis.

Some participants recognized problems but did not use qualifiers e.g. deficient, impaired, ineffective, decreased, compromised, raised or elevated.

From the above deductions both the researcher and experts decided on the following objectives for the workshop;

- Define and understand the importance of assessment-based nursing diagnosis.
- Differentiate between subjective and objective data (Assess the different sources of data).
- To understand, implement and formulate assessment-based nursing diagnoses, based on the five criteria, that was taught.

See Appendix 7 the lesson plan.

### 4.3 2 Post-test data analysis

The post-test data collected immediately after the presentation of the workshop was captured, tabulated and interpreted. The explanations of each criteria and diagnoses have been provided in table 3.3 and table 3.6.

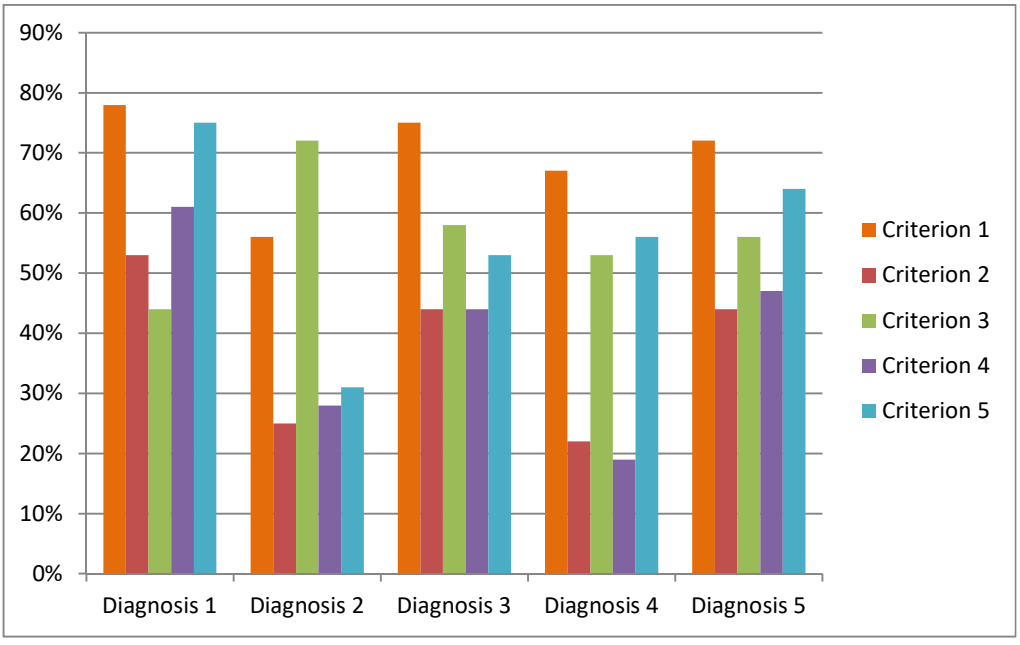



**Figure 4.2** Post-test Data

Figure 4.2 is representative of the post-test data scores for each diagnosis and each criterion. Appendix 14 has the post-test statistics for the above graph.

Table 4.3 is representative of the total number of criteria that was identified by the participants for all five diagnoses in the post-test.

**Table 4.3 Post-test Data (total number of criteria for all five diagnoses)**

| Post-test Data | | | | | |
|---|---|---|---|---|---|
| Participants n= 36 | The total percentage of **Criterion 1** identified in all 5 diagnoses<br><br>Total= 70% | The total percentage of **Criterion 2** identified in all 5 diagnoses<br><br>Total= 38% | The total percentage of **Criterion 3** identified in all 5 diagnoses<br><br>Total= 57% | The total percentage of **Criterion 4** identified in all 5 diagnoses<br><br>Total= 40% | The total percentage of **Criterion 5** identified in all 5 diagnoses<br><br>Total= 56% |

Looking at figure 4.2 and table 4.3 we can conclude the following:

70% of participants were able to include criterion 1 for all 5 assessment-based nursing diagnoses, pointing out that they now have an understanding of formulating a nursing diagnosis in terms of a problem and not a need.

Above 50 % of participants were now able to include criterion 3 and criterion 5 indicating a huge improvement from the less than 2% in the pre-test. This indicated that participants were now able to use nursing terminology when formulating assessment-based nursing diagnoses rather than using medical terminology. They may have understood what subjective and objective data is, and learned the importance of nursing diagnosis and the necessity of formulating it.

Less than 50% of participants were able to include criterion 2 and 4 confirming participants are still finding it difficult to list the response and probable cause as different things, they often note them as being the same or do not list them at all e.g. impaired skin integrity related to ulceration of sacral area.
Even though the results were less than 50%, it still showed much improvement in regard to the less than 2% in the pre-test results indicating that participants were now aware of the three part nursing diagnosis.
This for the researcher was a big breakthrough. Some participants were now able to include the three part nursing diagnosis that being:

- The problem statement which describes the client's health problem or response for which nursing therapy is given and qualifiers were also used e.g. ineffective breathing pattern.
- The related to or due to i.e. what is causing it / related factors e.g. accumulation of fluid in the lungs.
- The evidenced by i.e. data / observations / defining characteristics / signs and symptoms e.g. crackles in the right lower lobe.

### 4.3.3 Comparison between the pre-test and post-test data

The researcher evaluated the efficacy of the workshop on formulation of assessment-based nursing diagnosis by comparing the pre-test data versus the post-test data (Brink et al. 2016:131). That data was then tallied and presented in Appendix 15 showing a comparison between the criteria in the pre-test and the post-test data. Appendix 16 was representative of the number of assessment-based nursing diagnosis formulated in the pre-test in comparison to the post-test.

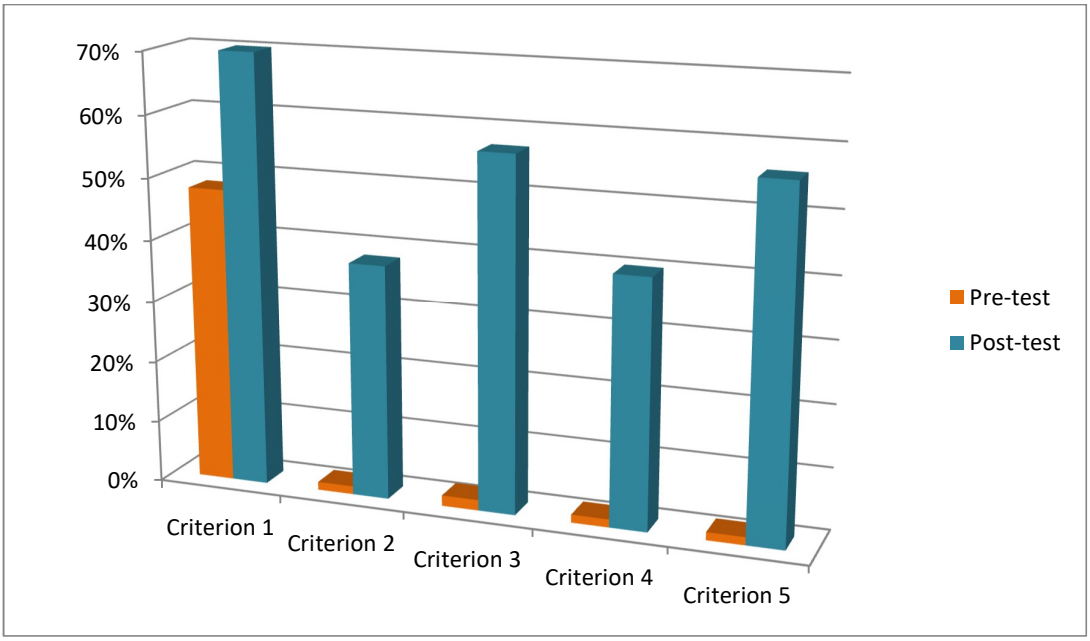



**Figure 4.3** Comparison between pre-test and post-test criteria

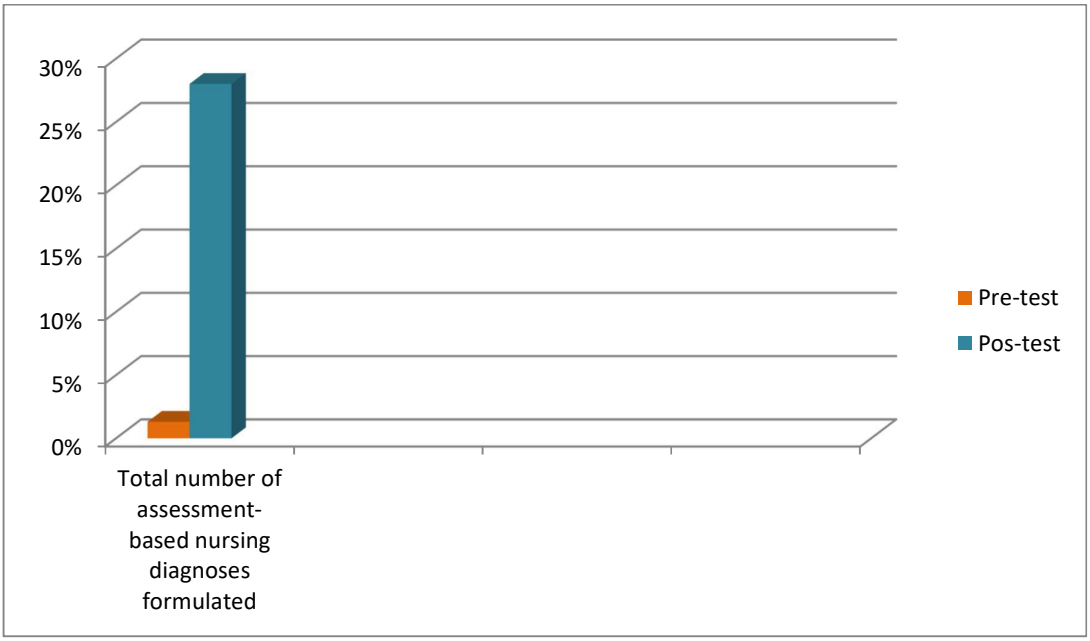



**Figure 4.4** Comparison between the total numbers of assessment-based nursing diagnoses formulated by the participants in the pre-test and post-test

The total number of pre-test participants were n=46 and n=36 in the post-test.

Looking at figure 4.3 and figure 4.4 we can deduce the following:

A definite improvement was noted in the number of criteria used and the amount of assessment-based nursing diagnoses formulated in the post-test. The numerical values are available in Appendices 15 and 16.

Criterion 1 increased from 37% to 70%.

Criteria 2 to 5 increased from less than 2% to values ranging from 38% to 57% showing extensive improvement in criteria usage post workshop.

The percentage of total assessment based-nursing diagnoses formulated in the pre-test was 1.3% in comparison to 28% in the post test, further affirming the positive effect of the workshop on the formulation of assessment-based nursing diagnoses.

The possible reasons for the above findings were discussed previously in the pre-test post-test data analysis in 4.3.1 and 4.3.2 respectively.

### 4.4 Measures of central tendency of the pre-test and post-test

Measures of central tendency represent statistics explaining the most typical or average scores in a distribution (Brink et al. 2016:185). The statistical comparison between the mean, median and mode of the pre-test and post-test scores are found in Appendix 17.

#### 4.4.1 Comparison between the mean, median and mode of the pre-test and the post-test

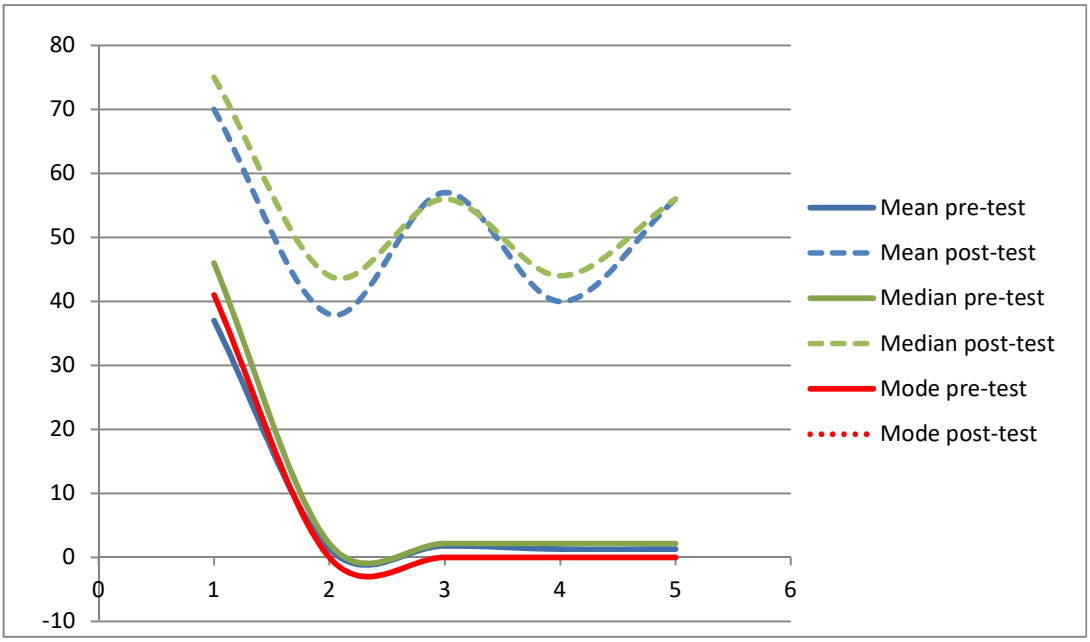



**Figure 4.5** Comparison between the mean, median and mode of the pre-test and the post-test

Figure 4.5 shows the differences in measures of central tendency between the pre-test and post-test indicating that there is some variability around this individual values within the original data.

The mean is defined as the arithmetical average of all the scores in a distribution. It is obtained by adding all the scores together and dividing the total by the total number of scores (Brink et al. 2016:185). From figure 4.5 we can conclude that the mean values of the pre-test formulation of each criteria is far lower than that of the

post-test values indicating improvement by participants in criteria inclusion after the workshop.

The median is the midpoint score in a group of data ranked from lowest to highest (Brink et al. 2016:185). Looking at figure 4.5 we can evaluate that the median values of the pre-test formulation of each criteria is far lower than that of the post-test again confirming improvement in criteria inclusion by the participants after the workshop.

The mode is the value of score that appears most frequently in a distribution (Brink et al. 2016:185). The mode has had no significance in the research data it is either 0% or non-existent.

### 4.5 Summary

The findings in this chapter were presented according to statistical data, including the pre-test and post-test results as well as a comparison between the two. Descriptive statistics were used to compare the data in order to deduce whether the workshop was effective in improving the nurses' ability in formulating assessment-based nursing diagnosis.

The main findings, limitations, recommendations and conclusions of the study will be discussed in the chapter to follow.

# CHAPTER 5

# MAIN FINDINGS, LIMITATIONS, RECOMMENDATIONS AND CONCLUSIONS

## 5.1 Introduction

Chapter 5 reports on the main findings of the study, limitations and recommendations for nursing education, research, practice and legislation. It ends with a conclusion of the study.

## 5.2 Summary of the main findings

The aim of the study was to improve the ability of nurses in formulating an assessment-based nursing diagnosis in order to provide quality holistic patient care. As affirmed previously by studies done internationally there is a lack of assessment-based nursing diagnoses being made by nurses (Hefferin & Hunter 1975; De Moraes Lopes et al. 2010). According to van Graan et al. (2016) in South Africa there is a lack of assessment-based nursing diagnoses and there is a need to produce independent critical thinkers who are able to question and make informed decisions about patient care.

Although there was significant improvement from the pre-test results to the post-test results, there is still a lack in the formulation of assessment-based nursing diagnosis by participants. This could be due to the fact that nurses still lack knowledge as to what are normal values for example in regard to vital signs or blood results etc. It could also be due to the participants not having a good knowledge base of chemistry, anatomy, physiology, pathophysiology or pharmacology and clinical experience. Participants are still finding it difficult to list the response and probable cause as different things, they often note them as being the same or do not list them at all e.g. impaired skin integrity related to ulceration of sacral area.

Some of the reasons for the above are as follows:

Mutshatshi et al. (2015:445-455) mention nurses not having enough autonomy as they follow the medical doctor’s orders or do not have enough time to assess

patients' holistically due to lack of staffing which could contribute to them forgetting or not using what they have learnt in practice and during their theoretical training. The way in which it is taught at different institutions may differ, as well as the time spent on it in the curriculum maybe limited. Currently, in South Africa there are two routes of becoming a registered nurse namely:

- "A two-year Diploma in General Nursing (referred to as the Bridging Programme) leading to registration as a general or psychiatric nurse in accordance with the SANC Regulation R683, as amended" (SANC 2018).

- "An integrated four-year diploma or degree qualification which included General, Psychiatric and Community Health Nursing and Midwifery in accordance with SANC Regulation No R425, as amended" (SANC 2018).

Both courses differ in the curriculum, as the four year diploma or degree has midwifery, community and psychiatry which could suggest a difference between the categories of registered nurses formulating assessment-based nursing diagnosis, as most of the participants were part of the bridging programme. A definite association to this can only be made if a study in the future is carried out at a different facility with degree or the four-year integrated diploma qualified nursing staff.

Internationally the education, preparation, practices and regulation of nurses varies. The International Council of Nurses (ICN) promotes global standardization of nursing education and has admitted that achieving these standards are challenging. There are disparities that occur in entry requirements for nursing students and the level of nursing qualifications obtained. Thus this problem is experienced both internationally and nationally. Singh & Mathuray (2018) revealed that more nurses must be knowledgeable about the laws of their countries and that which governs their practice in order to prevent problems in nursing and litigation against themselves both in South Africa and internationally. Thus nurses may not have an understanding of the legalities and the amount autonomy they can exhibit. Autonomy will inspire nurses to formulate assessment-based nursing diagnose and treat patients.

Both internationally and in South Africa there is a problem with the formulation of assessment-based nursing diagnosis either due to improper assessment which

unfortunately filters down to poor patient care. According to the nursing action standards in the United States and Canada, in order to provide professional care a nurse needs to use the nursing process, thus participation in activities that increase their knowledge in the nursing process is highly recommended (De Moraes Lopes et al. 2010). The researcher achieved improvement in this regard with the workshop as evidenced by the data results but there is room for more improvement.

### 5.3 Limitations

The study included a single private hospital in Gauteng with the inclusive population being registered nurse, thus limiting the variation in organizations and nursing staff. The sample population was small thus their ability to formulate assessment-based nursing diagnoses was limited to the said hospital and their registered nurses. Since the teaching of nursing diagnosis may vary from institution to institution the results cannot be generalized for nursing education in general. Thus it would be beneficial to include more organizations both private and public to get a broader understanding into the number of registered nurses throughout the country that are having difficulty in formulating assessment-based nursing diagnoses. This would be significant since the formulation of assessment-based nursing diagnosis impacts on the quality of nursing care.

Since the candidates had already done the pre-test, there was a possibility they could have done better in the post-test without the workshop, this however is hard to prove in the one-group pre-test, post-test design.

Although the workshop covered important components that could be used in any organization requiring nursing diagnosis to be formulated e.g. objective and subjective data, specific terminology, the three part nursing diagnosis and criteria in formulating assessment-based nursing diagnosis (actual), it did not cover more than one body system with its related anatomy, physiology and pathophysiology. Reason being is that only one body system can be taught per session in order for it to be valuable in terms of retention of knowledge. Thus it is impossible to cover more than one system in a single workshop. It would be valuable in future research to do a few workshops inclusive of different body systems.

The study covered actual assessment-based nursing diagnosis therefore future studies could be based on formulation of other nursing diagnosis e.g. potential or on nursing interventions.

## 5.4 Recommendations

### 5.4.1 Nursing education

It is important to standardize the teaching of assessment-based nursing diagnosis nationally and internationally, this can be done by adopting the NANDA nomenclature.

The workshop has proven positive in improving assessment-based nursing diagnosis and should be incorporated into the curriculum of the registered nurses' course in order to be taught in more detail and should be emphasized in clinical practice. This can be done by encouraging nurses to assess patients holistically in practice.

The study was able to identify the reasons for poor assessment of patients by registered nurses and use the errors identified to improve the registered nurses skills and knowledge base.

Going forward the workshop can be added to training of staff that is currently employed as registered nurses, ensuring continued professional development so that nurses are better equipped with new methodologies in practice and the ever changing disease profiles.

Adding to the above, there should be several workshops for each body system that has different case study scenarios including diseases of common occurrence within that system, which will stimulate critical thinking and clinical reasoning amongst nursing students in block and current registered nurses employed. By having several workshops we can overcome the problem regarding knowledge base of chemistry, anatomy, physiology, pathophysiology, pharmacology and clinical experience.

### 5.4.2 Nursing research

More research on the topic could be done at other hospitals both private and public in order to get evidence on the formulation of assessment-based nursing diagnoses with a larger sample size. The researcher delved into one aspect of nursing diagnosis that being actual assessment-based nursing diagnosis, leaving room for research on potential problems or risk nursing diagnosis, syndrome diagnosis and health promotion diagnosis, as well as the formulation of nursing care or interventions.

### 5.4.3 Nursing practice

The researcher recommends empowerment of nurses by encouraging them to assess patients correctly, formulate nursing diagnosis and proper nursing care thereby advocating for safe patient care. This can be done by implementing policies and procedures to allow nurses to speak out in the case of medico-legal risks and take ownership and be autonomous in their care of patients.

Nurses must be taught to use best practices when managing patients' in order to provide competent care; this can be added in practice when assessing patients.

The development of an electronic application that covers all systems with nursing diagnosis and nursing intervention could be developed for use in practice. It could allow nurses to draw up nursing diagnosis for their patient based on objective and subjective data they have recorded and assessed. Once this is done they will then be able to formulate nursing care for their patients. Monitoring of the nurses ability in formulating nursing diagnosis should be checked at hospital level in practice, either through audits of patient files or using the application to view their nursing diagnosis and treatment of the patient. This will in turn limit risk and reduce the length of stay of the patient reducing medical aid costs; hospital acquired infections and ensures quality patient care.

## 5.5 Conclusions

Ultimately the study aimed to answer the question would a workshop aimed at improving the ability of nurses to formulate assessment-based nursing diagnosis be effective?

The highlight for the researcher was that it was effective to an extent as there was a vast improvement in the ability of nurses in formulating assessment-based nursing diagnosis from the pre-test to the post-test, confirming participants now understood the importance of assessment-based nursing diagnosis on patient care and used critical thinking and clinical reasoning to assess the said patient in the case study scenario (Appendix 1).

Effort was made on the part of the researcher to update the participants' knowledge base regarding chemistry, anatomy, physiology, pathophysiology, pharmacology and clinical experience but this could not be done in one training session, thus there is a need for the workshop to be more intense, over longer periods of time and continuously with the inclusion of various body systems and disease profiles as well as more medical / surgical conditions in order to have long term effects on the quality of patient care.

Overall the researcher wants to emphasize that continued education is vitality important in the nursing profession as nurses cannot practice by the same standards they did years ago. It is their responsibility to stay informed of the changes to nursing practice and treatment modalities in order to provide quality, holistic, safe patient care.

## REFERENCES


Aldoobie, N., 2015, *'ADDIE Model',* American international Journal of Contemporary Research, vol.5.no.6.

Arcinegas Calle, M.C., Lobelo, F., Jimenez, M.A., Paez, D.C., Cortes, S., de Lima, A. & Duperly J., 2016, '*One-day workshop-based training improves physical activity prescription knowledge in Latin American physicians: a pre-test post-test study',* BMC public health.
[online] Available at: https://doi.org/10.1186/s12889-016-3883-2 12
Accessed: 30 August 2017

Battles, J.B., 2006, *'Improving patient safety by instructional systems design',* Centre for Quality and Safety in healthcare.
[online] Available at: https://qualitysafety.bmj.com/content/15/suppl_1/i25.short
Accessed: 11 August 2017

Berman, A., Snyder, S. J. & Frandsen, G. 2016. *Kozier & Erb's Fundamentals of Nursing*, 10th edition, Pearson, Cape Town.

Brink, H., van der Walt, C. & van Rensburg, G. 2016. *Fundamentals of research Methodology for healthcare Professionals*, 3rd edition, Juta, Cape Town.

Careertrend.com, '*What Are the Four Types of Nursing Diagnosis Statements?'*
[online] Available at: https://careertrend.com/job-descriptions
Accessed: 20 July 2018

Cerullo, J.A.S.B. & Da Cruz, A.L., 2010, *'Clinical Reasoning and Critical Thinking.'*
Available from: PUBMED [February 2010]
Accessed: 10 August 2018

Cortez, D.N., Lopes Macedo, M.M., Silva Sousa, D.A., dos Santos, J.C., Afonso, G.S., Reis, I.A. & de Carvalho Torres, H., 2017, *'Evaluating the effectiveness of an empowerment program for self-care in type 2 diabetes: a cluster randomized trial'*, BMC public health.

[online] Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5219728
Accessed: 15 September 2017

Cresswell, J.W., 2014. *Education Research: Planning, conducting and evaluating Quantitative and Qualitative research*, 4th edition, Pearson, Cape Town.

Ctb.ku.edu, '*Conducting a Workshop.'*
[online] Available at: https://ctb.ku.edu/en/table-of-contents/structure/training-and-technical-assistance/workshops/main
Accessed: 15 August 2018

De Moraes Lopes, M.H., Higa R., Dos Reis, M.J., de Oliveira N.R. & Christóforo, F.F., 2010,'*Evaluation of the nursing process used at a Brazilian teaching hospital'* ,International journal of nursing terminologies and classification.
Available from: PUBMED [September 2010]
Accessed: 30 August 2017

Dictionary.com, *'Anatomy | Define Anatomy at Dictionary.com'*
[online] Available at: https://www.dictionary.com/browse/anatomy
Accessed: 12 August 2018

Emsworld.com, *'Pathophysiology of Asthma | EMS World.'*
[online] Available at: https://www.emsworld.com/article/10324789/pathophysiology-asthma
Accessed: 13 August 2018

Encyclopedia.com, 'Nursing Diagnosis.'
[online] Available at: https://www.encyclopedia.com/medicine/encyclopedias-almanacs.../nursing-diagnosis
Accessed: 31 October 2018

Fatumo, S., Shome, S. & Macintyre, G., 2014, *'Workshops a Great Way to Enhance and Supplement a Degree.'*
Available at: PUBMED [February 2014]
Accessed: 30 August 2017

Fox, W. & Bayat, M.S. 2010. *A guide to managing research,* 1st edition , Juta, Cape Town.

Harding, M., Snyder J.S. & Preusser B.A., 2013. *Critical thinking cases in nursing,* 5th edition, Elsevier, Missouri.

Hefferin, E.A. & Hunter, R.E., 1975, *'Nursing assessment and care plan statements.'* Available from: PUBMED [September 1975]
Accessed: 30 August 2017

Herdman, T. H., 2011. *Nursing Diagnoses: Definitions & Classification 2012-2014*, 1st edition, Wiley-Blackwell, New York.

Kuosmanen, L., Kaltiala-Heino, R., Suominen, S., Karkkainen, J., Hatonen, H.,Ranta, S. & Valimaki, M., 2008, *'Patient complaints in Finland 2000-2004: a retrospective register study'*, Journal of epidemiology& community Health, vol.34.no11.

Lee, T.T., 2005, *'Nursing diagnoses: factors affecting their use in charting standardized care plans',* Journal of Clinical Nursing, vol.15, no.5, pp 640-647.

Lee, Y.W., Lin, H.L., Tseng, H.L., Tsai, Y.M. & Lee-Hsieh, J. 2017, *'Using training needs assessment to develop a nurse preceptor centred training program.'* Available from: PUBMED [May 2017]
Accessed: 14 August 2018

Lu, S.C., Cheng Y.C.& Chan P.T. 2016, *'Using ADDIE Model to Develop a Nursing Information System Training Program for New Graduate Nurse.'* Available from: PUBMED [2016]
Accessed: 5 June 2019

May, A., 2018, *'Instructional design models: Comparing ADDIE, Bloom, Gagne & Merrill.'*
[online] Available at: https://www.dashe.com
Accessed: 14 August 2018
MDRC, 2018, *'What is implementation research?'*

[online] Available at: https://www.mdrc.org/what-implementation-research
Accessed: 30 August 2018

Muller-Staub, M., Needham, I., Odenbreit, M., Lavin, M.A. & Van Achterberg T., 2006, *'Nursing diagnoses, interventions and outcomes – application and impact on nursing practice: systematic review',* Journal of Advanced Nursing, vol.56, no.5, pp 514-531.

Mutshatshi, T.E., Mothiba, T.M., Mamogobo, P.M. & Mbombi, M.O., 2018, *'Record-keeping: Challenges experienced by nurses in selected public hospitals.'*
Available from: PUBMED [July 2018]
Accessed: 17 August 2018

NANDA, 2013, *'International Blog: What is nursing diagnosis and why should I care?'*
[online] Available at: www.nanda.org/What-is-Nursing-Diagnosis-And-Why-Should- I-Care b 2.html
Accessed: 27 August 2017

NANDA, 2015-2017, *'NANDA Nursing Diagnosis List For 2015-2017 -Health Conditions.'*
[online] Available at: https://health-conditions.com/nanda-nursing-diagnosis-list-2015-2017/
Accessed: 28 September 2017

NurseJournal.org 2018, *'The Value of Critical Thinking in Nursing + Examples.'*
[online] Available at: https://nursejournal.org/community/the-value-of-critical-thinking-in-nursing/
Accessed: 28 January 2019

Nursing-theory.org 2018, *'Henderson's Nursing Theory.'*
[online] Available at: https://www.nursing-theory.org/theories-and-models/henderson-need-theory.php
Accessed: 29 October 2018

Nursingworld.org 2018, '*Learn the 5 Nursing Process Steps - American Nurses Association.'*
[online] Available at: https://www.nursingworld.org/practice-policy/.../what-is-nursing/the-nursing-process
Accessed: 12 August 2018

Oxforddictionaries.com 2017, *'biology | Definition of biology in English by Oxford Dictionaries.'*
[online] Available at: https://en.oxforddictionaries.com/definition/biology
Accessed: 31 October 2017

Polit, D.F. & Beck, T.B., 2017. *Nursing Research*, 10th edition, Lippincott, New York.

PSI Research Division, 2010. *'Pre-test and Post-test knowledge on HIV.'*
[online] Available at: https://psi.org/resources/researc-metrics/publications/
Accessed: 27 March 2018

Quinn, F.M. & Hughes, S.J., 2007. *Quinn's principles and practices of Nursing education*, 5th edition Nelson Thornes, United Kingdom.

Rakuom, C.P., Wagoro, M.C.A., Mirereh, J.O. & Galo S., 2016*, 'Returning Nursing to Nightingale: The Bigger Picture of Mainstreaming Kenya-Nursing Process',* vol.2, no 140.

SANC, Regulations: Scope of Practice
[online] Available at: www.sanc.co.za/regulat/Reg-scp.htm
Accessed 16 February 2018

Singh, A. & Mathuray M., 2018*, 'The nursing profession in South Africa – Are nurses adequately informed about the law and legal responsibilities when administering healthcare?'* De Jure (Pretoria) vol.51, no 1, Pretoria 2018.

Thefreedictionary.com, *'Clinical practice - definition of clinical practice by The Free Dictionary'*
[online] Available at: https://www.thefreedictionary.com/clinical+practice

Accessed: 15 October 2018

Thenerdynurse.com, *'Subjective Data Vs. Objective Data in Nursing - The Nerdy Nurse'*
[online] Available at: https://thenerdynurse.com/subjective-data-vs-objective-data-in-nursing/
Accessed: 12 August 2018

van Graan, A.C., Williams, M.J.S. & Koen, M.P. 2016, *' Clinical judgement within the South African clinical nursing environment: A concept analysis',*
Health SA Gesondheid, vol. 21, no.1.

Yilmaz, F.T., Sabanciogullari, S. & Aldemir, K., 2015, *'The opinions of Nursing students regarding the nursing process and their levels of proficiency in Turkey',*
The Journal of Caring sciences, vol.4, no4, pp 265-275.

Younas, A. & Sommer, J., 2015, *' Integrating Nursing Theory into Practice, Virginia's Henderson Need Theory'*, vol.8, no.2, pp 443-450.

## APPENDIX 1: CASE STUDY SCENARIO AND ANSWER SHEET

**Use the case study scenario below to formulate actual assessment-based nursing diagnoses for the said patient:**

Mr Jonas Dhlamini is a 68 year old retired accountant who developed a fever 2 days ago. He was brought in by his spouse. He verbalized having shaking chills, productive cough, and that lying down to sleep induces coughing. He also experiences shortness of breath on reclining. He expresses not experiencing any chest pain when coughing.

His wife states he smokes a packet of cigarettes a day and he drinks red wine occasionally. His mother died at age 75 due to lung cancer and she was a known hypertensive. His father was a known diabetic and died in a car accident at the age of 62. He has two siblings that are alive, a brother 63 years of age who is diabetic and a sister 55 years old with hypertension. He is married for 43 years and has a daughter and 2 grandchildren. He had an appendectomy in 1986, was diagnosed with type 2 diabetes in 2005 and is a known hypertensive since 2008. He is on Metformin (Glucophage) for his diabetes and Adalat for his hypertension. He also brought in a chest x-ray that was done a day ago when he visited his general practitioner.

On admission the patient's height is 1.65m and weight 63kgs.

Vital signs:

- BP: 160/100 mmHg
- Pulse: 84
- Respiration: 18
- Oxygen saturation: 84%  (on room air)
- Temperature: 39.4 ◦C

Urine analysis: SG 1010, pH 5, no chemical abnormalities detected.

Glucose: 14 mmol/hg

On auscultation there are decreased breath sounds in the left lower lobe anteriorly and posteriorly and coarse crackles in the upper left lobe. He wife verbalizes that he follows a normal diet. He reads in his spare time and loves watching the television. The cough is productive with rust coloured sputum. He is diagnosed with bacterial pneumonia.

- Capillary refill, fingers < 3 Seconds
- Patient orientated, GCS 15/15

| BLOOD RESULTS OF PATIENT WHILE IN HOSPITAL: | | | |
|---|---|---|---|
| | | | Reference |
| Date | On admission | Two days later | |
| S – Na | 135 | 137 | 135 – 145 mmol/l |
| S – K | 3.5 | 4.5 | 3.5 – 5.1 mmol/l |
| S – CL | 101 | 107 | 98 – 108 mmol/l |
| S – CO2 (Tot) | 22 | 23 | 22 – 28 mmol/l |
| S – Urea | 3.5 | 3.7 | 2.1 – 7.1 mmol/l |
| S – Creatinine | 64 | 75 | 62 – 115 mmol/l |
| Est GFR | 65 ml/min | 65 ml/min | >60 ml/min |
| S-C- Reactive Protein | 165.0 | 90.0 | 0.0 – 8.0 mg/l |

Doctor's notes and medical management of patient:

- Patient has a jelco insitu on his left arm.
- Low salt diet prescribed
- Two hourly vital signs monitoring
- Bloods ordered FBC, CRP, U & E
- O2 via nasal cannula

Prescription chart:

- Insulin novarapid given according to the sliding scale
- Adalat (Nifedipine) patients usual dosage increased from 30 to 60 mg orally daily
- Ceftriaxone (Rocephin) 1g IVI b.d.
- Glucophage stopped for now

Participant number:

Age:

Sex:

Discipline/Ward:

Answers:

## APPENDIX 2: CRITERIA FOR ASSESSMENT-BASED NURSING DIAGNOSIS (ACTUAL)

# Criteria to identify gaps in actual assessment-based nursing diagnosis

Participant number:

_____

Age:_____

Sex:_____

| The total number of assessment-based nursing diagnoses identified by the researcher.<br><br>Number of Actual nursing diagnoses:<br><br>----- | The total number of assessment-based nursing diagnoses identified by the participant. (Actual nursing diagnoses)<br><br>(NB: All 5 criteria must be met in order for the nursing diagnoses to be assessment-based)<br><br>----- |
|---|---|

| If the diagnosis fits the criteria listed below and is correct tick (✓) If it does not fit the criteria below and is incorrect cross (✗) | | | | | |
|---|---|---|---|---|---|
| **Criterion** | **Diagnosis 1** | **Diagnosis 2** | **Diagnosis 3** | **Diagnosis 4** | **Diagnosis 5** |
| **1. The diagnosis is correct if it is stated in terms of a problem and not a need.<br><br>(e.g. Deficient fluid volume)<br><br>rather than<br><br>(e.g. Fluid replacement)** | | | | | |
| **2. The diagnosis is correct if both elements of the statement do not say the same thing i.e. the response and probable cause are the same.** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **(e.g. Impaired skin integrity related to immobility)**<br><br>**rather than**<br><br>**(e.g. Impaired skin integrity related to ulceration of sacral area)** | | | | | |
| **3. The diagnosis is correct if it uses nursing terminology rather than medical terminology to describe the client's response**<br><br>**(e.g. Ineffective airway clearance related to accumulation of secretions in lungs)**<br><br>**rather than**<br><br>**(e.g. Ineffective airway clearance related to pneumonia)** | | | | | |
| **4. The diagnosis is correct if it reflects a good knowledge base of chemistry, anatomy, physiology, pathophysiology or pharmacology and clinical experience on behalf of the nurse.**<br><br>**Nurses must apply knowledge from different areas to recognize significant cues and patterns to generate hypotheses of the data**<br><br>**(e.g. Imbalanced nutrition levels due to the inability of the pancreas to control blood glucose levels as evidenced by a GM reading of 20mmol/hg)**<br><br>**The above statement confirms the nurse knows the anatomy and pathophysiology regarding diabetes mellitus.**<br><br>**rather than**<br><br>**(e.g. Imbalanced nutrition levels due to diabetes mellitus)** | | | | | |
| **5. The diagnosis is correct if it reflects the nurse having a working knowledge of what is normal.**<br><br>**Nurses should know the population norms for vital signs, laboratory tests etc.** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **They should know what is normal for a particular patient taking into account age, physical makeup, lifestyle, co-morbities and culture.**<br><br>**(e.g. Altered body temperature related to urinary tract infection as evidenced by a temperature of 39.4°c or leukocytes in the urine or crp of 165)** | | | | | |
| **Totals** | **/5** | **/5** | **/5** | **/5** | **/5** |

(Berman, Snyder & Frandsen 2016) (Treshika Naicker effective 25/07/2018)

## APPENDIX 3: ASSESSMENT-BASED NURSING DIAGNOSES FORMULATED FROM THE CASE STUDY SCENARIO

Actual nursing diagnoses:

- ✓ Impaired/**Altered**/Raised **body temperature** / Pyrexia **related to lung infection** as **evidenced by** a temperature of 39.4°c or shaking chills or CRP of 165.

- ✓ Productive cough or **ineffective airway clearance related to accumulation of secretions in the lungs**/ lung infection/inflammation of the lung as **evidenced by** crackles in the left upper lobe or rust coloured sputum.

- ✓ Shortness of breath/ Altered respiratory function/Impaired breathing/Impaired respiration/ Compromised respiration/ or **ineffective breathing pattern related to accumulation of secretions in the lungs**/ infection of the lung/ inflammation of the lungs **as evidenced by** decreased oxygen saturation level of 84% on room air or decreased breath sounds, productive cough.

- ✓ Elevated Blood Pressure related to impaired respiratory function or respiratory distress as evidenced by a blood pressure of 160/100 mmHg or **reduced cardiac output related to increased peripheral vascular resistance secondary to hypertension as evidenced by** a blood pressure of 160/100mmHg.

- ✓ Elevated blood glucose or **imbalanced nutrition levels or fluid and electrolyte imbalance related to the inability of the pancreas/ineffective functioning of the pancreas/ insulin deficiency/ insulin resistance to control blood glucose levels as evidenced by** a GM reading of 14mmol/hg

NB: Formulated using NANDA literature - Ideally the bold writing is the best qualifiers to be used according to NANDA literature (NANDA 2013).

## APPENDIX 4: FEEDBACK LETTER WITH PRE-TEST DATA GIVEN TO EXPERTS, REQUESTING OBJECTIVES FOR INCLUSION INTO THE WORKSHOP

Dear Sir / Madam

Good day.

I am registered at the University of Witwatersrand for my MSc in Nursing Science (Education).

The provision of high quality patient care is important to all of us, thus in order to achieve this; patient complaints and problems are being used to ensure quality assurance. The aim of nursing diagnosis is to provide appropriate nursing care to individual patients according to their condition and in turn providing quality care. The study will aim to address the concerns regarding the inadequacy of assessment-based nursing diagnosis by registered nurses focusing on their formulation of actual nursing diagnoses. This will be done by aiming to bridge the theory practice gap by introducing an intervention study in the form of a workshop which will endeavour to improve the quality of assessment-based nursing diagnoses, which in turn encourages critical thinking.

A scenario was given to the participant's comprising of 46 registered nurses at a Private Hospital. They were asked to formulate assessment-based nursing diagnoses focusing on actual problems. There were 5 nursing diagnoses present in the scenario that needed to be formulated. In order for each of the 5 nursing diagnoses to be assessment-based, they had to also fit 5 criteria.

Please see attached the results of the pre-test regarding areas lacking in regard to assessment-based nursing diagnosis.

Conclusions derived from the data are as follows:

- Some participants understand what the first part of the nursing diagnosis is and can recognize or assess the problem.
- They do not understand that the actual diagnosis is a 3 part nursing diagnosis and are missing part 2 and 3.
- 2 being the related to: what is causing it / related factors - this could stem from a lack of knowledge base regarding chemistry, anatomy, physiology, pathophysiology, pharmacology and clinical experience on behalf of the nurse.
- 3 being the evidenced by: data / observations / defining characteristics - this could stem from a lack of knowledge of what is the population norm for example vital signs or laboratory results.
- They recognize problems but do not use qualifiers e.g. Deficient, Impaired,

Ineffective, Decreased, Compromised, Raised, Elevated

- Some participant provided medical history, subjective and objective data thus not understanding what a nursing diagnosis is.
- Some provided nursing interventions rather than nursing diagnoses.
- Some provided medical diagnosis rather than nursing diagnosis thus they do not understand the difference.
- Some didn't write much emphasizing that they do not understand the importance of nursing diagnosis or are just unable to formulate it.

| Pre-test Data | | | | | |
|---|---|---|---|---|---|
| Participants N= 46 | Criterion 1 Total 48% | Criterion 2 Total 1.3 % | Criterion 3 Total 1.7% | Criterion 4 Total 1.3 % | Criterion 5 Total 1.3 % |
| Diagnosis 1 | 21/46 46% | 2/46 4.3% | 3/46 7% | 2/46 4.3% | 2/46 4.3% |
| 2 | 19/46 41% | 0/46 0% | 0/46 0% | 0/46 0% | 0/46 0% |
| 3 | 29/46 63% | 0/46 0% | 0/46 0% | 0/46 0% | 0/46 0% |
| 4 | 23/46 50% | 0/46 0% | 0/46 0% | 0/46 0% | 0/46 0% |

| | | | | | |
|---|---|---|---|---|---|
| 5 | 19/46<br>41% | 1/46<br>2.17% | 1/46<br>2.17% | 1/46<br>2.17% | 1/46<br>2.17% |

Data from the 5 diagnoses and the 5 criteria:

- Criteria 1 stated in terms of a problem not a need e.g. deficient fluid volume rather than fluid replacement.

Diagnosis 1 = 21/46, 46 % met criteria one.

Diagnosis 2 = 19/46, 41% met criteria one.

Diagnosis 3 = 29/46, 63% met criteria one.

Diagnosis 4 = 23/46, 50% met criteria one.

Diagnosis 5 = 19/46, 41% met criteria one.

- Criteria 2 the diagnosis is correct if both elements of the statements do not say the same thing i.e. the response and probable cause are the same thing.

Diagnosis 1 = 2/46, 4.3 % met criteria two.

Diagnosis 2 = 0 /46, 0 % met criteria two.

Diagnosis 3 = 0/46, 0% met criteria two.

Diagnosis 4 = 0/46, 0 % met criteria two.

Diagnosis 5 = 1/46, 2.17 % met criteria two.

- Criteria 3 the diagnosis is correct if it uses nursing terminology rather than medical terminology to describe the client's response.

Diagnosis 1 = 3/46, 7 % met criteria three.

Diagnosis 2 = 0 /46, 0 % met criteria three.

Diagnosis 3 = 0/46, 0 % met criteria three.

Diagnosis 4 = 0/46, 0 % met criteria three.

Diagnosis 5 = 1/46, 2.17 % met criteria three.

- Criteria 4 the diagnosis is correct if it reflects a good knowledge base of chemistry, anatomy, physiology, pathophysiology, pharmacology and clinical experience on behalf of the nurse.

Diagnosis 1 = 2/46, 4.3 % met criteria four.

Diagnosis 2 = 0 /46, 0 % met criteria four.

Diagnosis 3 = 0/46, 0 % met criteria four.

Diagnosis 4 = 0/46, 0 % met criteria four.

Diagnosis 5 = 1/46, 2.17 % met criteria four.

- Criteria 5 the diagnosis is correct if it reflects the nurse having a working knowledge of what is normal, nurses should know the population norms for vital signs, laboratory tests etc.

Diagnosis 1 = 2/46, 4.3 % met criteria five.

Diagnosis 2 = 0 /46, 0 % met criteria five.

Diagnosis 3 = 0/46, 0 % met criteria five.

Diagnosis 4 = 0/46, 0 % met criteria five.

Diagnosis 5 = 1/46, 2.17 % met criteria five.

Results from the data above revealed:

The total number of assessment-based nursing diagnoses identified out of 5 was diagnosis 1 identified by 2 participants out of 46 that fit all the 5 criteria. Diagnosis 5 was also identified by 1 participant that fit all the 5 criteria. They were unable to correctly formulate the other 4 diagnoses.

From the conclusions above and data attached I would like to request your opinion regarding what objectives would you include in the workshop to assist registered nurses in formulating assessment-based nursing diagnoses focusing on actual nursing diagnoses and not potential etc.

NB: Thus I require learning objectives, ideas or study material that you think should be included into the workshop.

Thanking you for your kind attention

Yours sincerely

_____

| STUDENT | SUPERVISOR |
| --- | --- |
| Mrs. Treshika Naicker | Mrs. Lizelle Crous |
| treshika.naicker@mediclinic.co.za | Lizelle.Crous@wits.ac.za |
| +27793941714 | +27823195642 |

Human Research Ethics Committee (Medical)

Prof. P Cleaton-Jones +27117172301 peter.cleaton-jones1@wits.ac.za

Administrative Officers

Ms Z Ndlovu +27117172700 zanele.ndlovu@wits.ac.za

Mr Rhulani Mkanasi +27117172656 Rhulani.mkansi@wits.ac.za

Mr Lebo Moeng +27117171252 Lebo.moeng@wits.ac.za

## APPENDIX 5: PARTICIPANT'S CONSENT

Dear Participant

Re: Consent to participate in the research

My name is Treshika Naicker. I am studying towards my Master's degree in Nursing Science at the University of Witwatersrand.
You are invited to participate in a research that I will be conducting at your place of work. This is a consent form for research participation and contains important information about the study and what to expect if you decide to participate. Please read the information carefully and you are most welcome to ask questions at any time of the study.

The provision of high quality patient care is important to all of us, thus in order to achieve this; patient complaints and problems are being used to ensure quality assurance. The aim of nursing diagnosis is to provide appropriate nursing care to individual patients according to their condition and in turn provide quality care.

The study will aim to address the concerns regarding the inadequacy of assessment-based nursing diagnoses by registered nurses. You will be required to attend the pre-test, thereafter a workshop and lastly a post-test. This will be done by aiming to bridge the theory practice gap by introducing a pre-test post-test intervention study in the form of a workshop which will endeavour to improve the quality of assessment-based nursing diagnoses, which in turn encourages critical thinking,

Pre-test: You will be given a scenario prior to the intervention. You will be given 30 minutes to formulate assessment-based nursing diagnoses. Criteria will be used to evaluate the quality of the assessment-based nursing diagnoses. The analysis will help the researcher determine the causative factors for poor formulation of assessment-based nursing diagnoses by registered nurses.

Intervention: The workshop will be designed using the ADDIE Model which is analysis, design, development, implementation and evaluation based on the needs identified in the pre-test by experts and the researcher. It will also include guidelines

for writing a nursing diagnostic statement as per Kozier & Erbs fundamentals in order to evaluate the quality of assessment-based nursing diagnoses. The four categories of the NANDA system of nursing diagnosis will also be used.

Post-test: On completion of the workshop, your capability of identifying and formulating assessment-based nursing diagnoses will be evaluated.

The study will not influence your current employment status; however I do hope the information gained from the workshop will enrich your knowledge in the formulation of assessment-based nursing diagnosis.
You can be assured that you name and personal information will not be disclosed, all your information will be kept confidential.
It is your choice to participate in the study or not. If you choose to take part in the study, you will be asked to sign the consent form and a copy will be given to you. You are under no obligation to stay in the study once you signed the consent, you may withdraw at any time without giving any reason.

Thanking you for your kind attention.
Treshika Naicker

Consent: I have read the above information and am aware that I am being asked to participate in a research study. I confirm that I had the opportunity to ask questions and they were answered to my satisfaction. I am also aware that my participation is voluntary and that I may withdraw at any time, without giving any reason. I will not discuss the intervention and post-test evaluation with other participants.
I agree to take part in this study.

Participant signature: _____ Date: _____
Participant number: _____

## APPENDIX 6: THE EXPERT'S FEEDBACK FORM REGARDING THE ASSESSMENT-BASED NURSING DIAGNOSIS CRITERIA

Job Title: _____

1. What aspects do you feel nurses are failing to include in assessment-based nursing diagnosis?

_____
_____
_____

2. Do you feel the criteria measures what it is supposed to? Explain reasoning.

_____
_____
_____

3. Do you think the criteria covers what is lacking in assessment-based nursing diagnosis?

_____
_____
_____

4. Added comments regarding changes to be made to the checklist, validity of the checklist, formatting and overall importance.

_____
_____
_____

**APPENDIX 7: LESSON PLAN**

# LESSON PLAN

**Date:** 1st group 27/08/2018, 2nd group 03/09/2018, 3rd group 10/09/2018 and 4th group 17/09/2019.

**Venue:** Training room

**Facilitator:** Treshika Naicker

| **Information** | | | |
|---|---|---|---|
| Title of the lesson | Workshop and Post-test on assessment based nursing diagnosis | Number of students | (Groups) = 12 - 19 participants |
| Time Frame | 4 hour Session<br>8H00 to 12h00 | Periods | 1 period = 1 hour<br>4 periods per session |
| References | • Berman, A., Snyder, S. J. & Frandsen, G. 2016. Kozier & Erb's Fundamentals of Nursing, 10th edition, Pearson, Cape.<br>• Careertrend.com, 'What Are the Four Types of Nursing Diagnosis Statements?' [online] Available at: https://careertrend.com/job-descriptions<br>• Dictionary.com, 'Anatomy \| Define Anatomy at Dictionary.com' [online] Available at: https://www.dictionary.com/browse/anatomy<br>• Emsworld.com, 'Pathophysiology of Asthma \| EMS World.' [online] Available at: https://www.emsworld.com/article/10324789/pathophysiology-asthma<br>• Encyclopedia.com, 'Nursing Diagnosis.' [online] Available at: https://www.encyclopedia.com/medicine/encyclopedias-almanacs.../nursing-diagnosis<br>• NANDA, 2013, 'International Blog: What is nursing diagnosis and why should I care?' [online] Available at: www.nanda.org/What-is-Nursing-Diagnosis-And-Why-Should- I-Care b 2.html<br>• NANDA, 2015-2017, 'NANDA Nursing Diagnosis List For 2015-2017 -Health Conditions.' [online] Available at: https://health-conditions.com/nanda-nursing-diagnosis-list-2015-2017/<br>• Nursingworld.org 2018, 'Learn the 5 Nursing Process Steps - American Nurses Association.' [online] Available at: https://www.nursingworld.org/practice-policy/.../what-is-nursing/the-nursing-process<br>• Oxforddictionaries.com 2017, 'biology \| Definition of biology in English by Oxford Dictionaries.' [online] Available at: https://en.oxforddictionaries.com/definition/biology<br>• Thenerdynurse.com, 'Subjective Data Vs. Objective Data in Nursing - The Nerdy Nurse' | | |

| | |
|---|---|
| | [online] Available at: https://thenerdynurse.com/subjective-data-vs-objective-data-in-nursing/ |

| Lecture outlay | | | | |
|---|---|---|---|---|
| **Objective number** | **Objective** | **Activity** | **Teaching aid** | **Time** |
| 1 | • Define and understand the importance of assessment-based nursing diagnosis. | Lecture | Power point | 30 minutes |
| 2 | • Differentiate between subjective and objective data (Assess the different sources of data) | Reflect<br>Demonstrate | Power Point | 60 minutes |
| 3 | • To understand, implement and formulate assessment-based nursing diagnoses based on the five Criteria taught.<br>• Post-test | Scenario | Chart paper<br>Answer sheet | 150 minutes<br>30 minutes |

## APPENDIX 8: PARTICIPANT'S FEEDBACK

### PARTICIPANT ASSESSMENT

Please take a few minutes to complete this evaluation form. Your comments will be used to improve future programmes.

| | |
|---|---|
| Course Title | Formulation of nursing diagnosis |
| Venue | [redacted] Training Room |
| Date | 27.06.18 |
| Facilitator | Dr Neshika Naicker |

| * Please circle | DISAGREE | | AGREE | |
|---|---|---|---|---|
| The contact session / workshop arrangements were efficient | 1 | 2 | 3 | (4) |
| The contact session / workshop was well organised and structured | 1 | 2 | 3 | (4) |
| The environment helped me to learn | 1 | 2 | 3 | (4) |
| The facilitator was well prepared | 1 | 2 | 3 | (4) |
| The facilitator is an effective communicator | 1 | 2 | 3 | (4) |
| Learning objectives were clearly stated | 1 | 2 | 3 | (4) |
| The content was relevant to the stated learning objectives | 1 | 2 | 3 | (4) |
| The contact session / workshop content was relevant to my learning needs | 1 | 2 | 3 | (4) |
| The visual aids were effective to illustrate important concepts | 1 | 2 | 3 | (4) |
| The handouts and/or workbook added value to my learning | 1 | 2 | 3 | (4) |
| Learning material was of a professional standard | 1 | 2 | 3 | (4) |
| Individual and group participation was encouraged | 1 | 2 | 3 | (4) |
| My questions were dealt with adequately | 1 | 2 | 3 | (4) |
| The objectives were met; I know how to apply my new knowledge | 1 | 2 | 3 | (4) |
| The contact session / workshop met my expectations | 1 | 2 | 3 | (4) |
| I will recommend this workshop to my colleagues | 1 | 2 | 3 | (4) |

Please circle your overall rating of the contact session / workshop.

(EXCELLENT) GOOD FAIR POOR

Please provide suggestions and additional comments

Very informative, enjoyed the presentation
learnt alot thankyou!

Thank you!

## APPENDIX 9: HREC (MEDICAL) CLEARANCE CERTIFICATE

R14/49 Ms T Naicker

**HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)**
**CLEARANCE CERTIFICATE NO. M180449**

| | |
|---|---|
| **NAME:** (Principal Investigator) | Ms T Naicker |
| **DEPARTMENT:** | School of Therapeutic Sciences<br>Department of Nursing Education<br>Medical School<br>University |
| **PROJECT TITLE:** | Development and implementation of a workshop to improve assessment-based nursing diagnoses by nurses at a private hospital |
| **DATE CONSIDERED:** | 04/05/2018 |
| **DECISION:** | Approved unconditionally |
| **CONDITIONS:** | |
| **SUPERVISOR:** | Ms L Crous |
| **APPROVED BY:** | Professor CB Penny, Chairperson, HREC (Medical) |
| **DATE OF APPROVAL:** | 05/07/2018 |

**This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.**

**DECLARATION OF INVESTIGATORS**

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on 3rd floor, Phillip V Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.
I/We fully understand the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to resubmit to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in **April** and will therefore be due in the month of **April** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

05/07/2018
Date

**PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES**

## APPENDIX 10: PERMISSION FROM THE HOSPITAL MANAGER TO CONDUCT THE RESEARCH

Dear Sir / Madam

Re: Permission to conduct research for Masters in Nursing Science

My name is Treshika Naicker. I am studying towards my Master's degree in Nursing Science at the University of Witwatersrand. I would like to request permission to conduct my research on registered nurses at your institution. The provision of high quality patient care is important to all of us, thus in order to achieve this; patient complaints and problems are being used to ensure quality assurance. The aim of nursing diagnosis is to provide appropriate nursing care to individual patients according to their condition and in turn providing quality care.

The study will aim to address the concerns regarding the inadequacy of assessment-based nursing diagnosis by registered nurses. The personnel will be required to attend a pre-test phase, thereafter a workshop and lastly a post-test phase. This will be done by aiming to bridge the theory practice gap by introducing an intervention study in the form of a workshop which will endeavour to improve the quality of assessment-based nursing diagnoses, which in turn encourages critical thinking.

Pre-test phase: The participants will be given a scenario prior to the intervention. They will be given 30 minutes to formulate assessment-based nursing diagnoses. Criteria will be used to evaluate the quality of assessment-based nursing diagnoses. The data from the analysis will help the researcher determine the causative factors for poor formulation of assessment-based nursing diagnosis by registered nurses.

Intervention: It will be done in the form of a workshop using the guidelines for writing a nursing diagnostic statement as per Kozier & Erbs fundamentals in order to evaluate the quality of assessment-based nursing diagnoses. The four categories of the NANDA system of nursing diagnosis will also be used.

Post-test: On completion of the workshop an evaluation will be done to assess the effectiveness of the workshop.

I assure you that the names of the personnel that will participate in the study and the name of the hospital will not be revealed. Confidentiality will be maintained throughout. The data will be collected electronically and saved on a password protected computer. Only the supervisor and I will have access to the data

Thanking you for your kind attention

Yours sincerely

_____


| STUDENT | SUPERVISOR |
|---|---|
| Mrs. Treshika Naicker | Mrs. Lizelle Crous |
| treshika.naicker@mediclinic.co.za | Lizelle.Crous@wits.ac.za |
| +27793941714 | +27823195642 |

Human Research Ethics Committee (Medical)

Prof. P Cleaton-Jones +27117172301 peter.cleaton-jones1@wits.ac.za

Administrative Officers

Ms Z Ndlovu +27117172700 zanele.ndlovu@wits.ac.za

Mr Rhulani Mkanasi +27117172656 Rhulani.mkansi@wits.ac.za

Mr Lebo Moeng +27117171252 Lebo.moeng@wits.ac.za

## APPENDIX 11: PERMISSION FROM THE HOSPITAL NURSING SERVICES MANAGER TO CONDUCT THE RESEARCH

Dear Sir / Madam

Re: Permission to conduct research for Masters in Nursing Science

My name is Treshika Naicker. I am studying towards my Master's degree in Nursing Science at the University of Witwatersrand.

I would like to request permission to conduct my research on registered nurses at your institution.

The provision of high quality patient care is important to all of us, thus in order to achieve this; patient complaints and problems are being used to ensure quality assurance. The aim of nursing diagnosis is to provide appropriate nursing care to individual patients according to their condition and in turn providing quality care.

The study will aim to address the concerns regarding the inadequacy of assessment-based nursing diagnosis by registered nurses. The personnel will be required to attend a pre-test, thereafter a workshop and lastly a post-test. This will be done by aiming to bridge the theory practice gap by introducing an intervention study in the form of a workshop which will endeavour to improve the quality of assessment-based nursing diagnoses, which in turn encourages critical thinking.

Pre-test: The participants will be given a scenario prior to the intervention. They will be given 30 minutes to formulate assessment-based nursing diagnoses.
Criteria will be used to evaluate the quality of assessment-based nursing diagnoses. The data from the analysis will help the researcher determine the causative factors for poor formulation of assessment-based nursing diagnosis by registered nurses.

Intervention: The workshop will be developed using the ADDIE Model which is analysis, design, development implementation and evaluation based on the needs

identified in the pre-test by experts and the researcher. It will also include guidelines for writing a nursing diagnostic statement as per Kozier & Erbs fundamentals in order to evaluate the quality of assessment-based nursing diagnoses. The four categories of the NANDA system of nursing diagnosis will also be used.

Post-test: On completion of the workshop an evaluation will be done to assess the effectiveness of the workshop.

I assure you that the names of the personnel that will participate in the study and the name of the hospital will not be revealed. Confidentiality will be maintained throughout. The data will be collected electronically and saved on a password protected computer. Only the supervisor and I will have access to the data.

Thanking you for your kind attention

Yours sincerely

_____


STUDENT

Mrs. Treshika Naicker

treshika.naicker@mediclinic.co.za
+27793941714

SUPERVISOR

Mrs. Lizelle Crous

Lizelle.Crous@wits.ac.za
+27823195642


**Human Research Ethics Committee (Medical)**

Prof. P Cleaton-Jones +27117172301 peter.cleaton-jones1@wits.ac.za

**Administrative Officers**

Ms Z Ndlovu +27117172700 zanele.ndlovu@wits.ac.za
Mr Rhulani Mkanasi +27117172656 Rhulani.mkansi@wits.ac.za
Mr Lebo Moeng +27117171252 Lebo.moeng@wits.ac.za

**Permission granted:** **Signature:**
**Hospital stamp:** **Date:**

## APPENDIX 12: PERMISSION FROM THE HOSPITAL ETHICS GROUP TO CONDUCT THE RESEARCH

Dear Sir / Madam

Re: Permission to conduct research for Masters in Nursing Science

My name is Treshika Naicker. I am studying towards my Master's degree in Nursing Science at the University of Witwatersrand. I would like to request permission to conduct my research on registered nurses at your institution. The provision of high quality patient care is important to all of us, thus in order to achieve this; patient complaints and problems are being used to ensure quality assurance. The aim of nursing diagnosis is to provide appropriate nursing care to individual patients according to their condition and in turn providing quality care.

The study will aim to address the concerns regarding the inadequacy of assessment-based nursing diagnosis by registered nurses. The personnel will be required to attend a pre-test phase, thereafter a workshop and lastly a post-test phase. This will be done by aiming to bridge the theory practice gap by introducing an intervention study in the form of a workshop which will endeavour to improve the quality of assessment-based nursing diagnoses, which in turn encourages critical thinking.

Pre-test phase: The participants will be given a scenario prior to the intervention. They will be given 30 minutes to formulate assessment-based nursing diagnoses. Criteria will be used to evaluate the quality of assessment-based nursing diagnoses. The data from the analysis will help the researcher determine the causative factors for poor formulation of assessment-based nursing diagnosis by registered nurses.

Intervention: It will be done in the form of a workshop using the guidelines for writing a nursing diagnostic statement as per Kozier & Erbs fundamentals in order to evaluate the quality of assessment-based nursing diagnoses. The four categories of the NANDA system of nursing diagnosis will also be used.

Post-test: On completion of the workshop an evaluation will be done to assess the effectiveness of the workshop.

I assure you that the names of the personnel that will participate in the study and the name of the hospital will not be revealed. Confidentiality will be maintained throughout. The data will be collected electronically and saved on a password protected computer. Only the supervisor and I will have access to the data

Thanking you for your kind attention

Yours sincerely

_____


| STUDENT | SUPERVISOR |
|---|---|
| Mrs. Treshika Naicker | Mrs. Lizelle Crous |
| treshika.naicker@mediclinic.co.za | Lizelle.Crous@wits.ac.za |
| +27793941714 | +27823195642 |

Human Research Ethics Committee (Medical)

Prof. P Cleaton-Jones +27117172301 peter.cleaton-jones1@wits.ac.za

Administrative Officers

Ms Z Ndlovu +27117172700 zanele.ndlovu@wits.ac.za

Mr Rhulani Mkanasi +27117172656 Rhulani.mkansi@wits.ac.za

Mr Lebo Moeng +27117171252 Lebo.moeng@wits.ac.za

**APPENDIX 13: PRE-TEST DATA**

| Pre-test Data | | | | | |
|---|---|---|---|---|---|
| Participants N= 46 | Criterion 1 Total 48% | Criterion 2 Total 1.3 % | Criterion 3 Total 1.7% | Criterion 4 Total 1.3 % | Criterion 5 Total 1.3 % |
| Diagnosis 1 | 21/46 46% | 2/46 4.3% | 3/46 7% | 2/46 4.3% | 2/46 4.3% |
| 2 | 19/46 41% | 0/46 0% | 0/46 0% | 0/46 0% | 0/46 0% |
| 3 | 29/46 63% | 0/46 0% | 0/46 0% | 0/46 0% | 0/46 0% |
| 4 | 23/46 50% | 0/46 0% | 0/46 0% | 0/46 0% | 0/46 0% |
| 5 | 19/46 41% | 1/46 2.17% | 1/46 2.17% | 1/46 2.17% | 1/46 2.17% |

## APPENDIX 14: POST-TEST DATA

| Post-test Data | | | | | |
|---|---|---|---|---|---|
| Participants n= 36 | Criteria 1 70% | Criteria 2 38% | Criteria 3 57% | Criteria 4 40% | Criteria 5 56% |
| Diagnosis 1 | 28/36 78% | 19/36 53% | 16/36 44% | 22/36 61% | 27/36 75% |
| 2 | 20/36 56% | 9/36 25% | 26/36 72% | 10/36 28% | 11/36 31% |
| 3 | 27/36 75% | 16/36 44% | 21/36 58% | 16/36 44% | 19/36 53% |
| 4 | 24/36 67% | 8/36 22% | 19/36 53% | 7/36 19% | 20/36 56% |
| 5 | 26/36 72% | 16/36 44% | 20/36 56% | 17/36 47% | 23/36 64% |

## APPENDIX 15: COMPARISON BETWEEN PRE-TEST AND POST-TEST DATA

| Criteria | Pre-test | Post-test |
|---|---|---|
| Criterion 1<br>stated in terms of a problem not a need e.g. deficient fluid volume | 111/230<br>=48% | 125/180<br>=70% |
| Criterion 2<br>the diagnosis is correct if both elements of the statements do not say the same thing i.e. the response and probable cause are the same thing | 3/230<br>=1.3% | 68/180<br>=38% |
| Criterion 3<br>the diagnosis is correct if it uses nursing terminology rather than medical terminology to describe the client's response | 4/230<br>=1.7% | 102/180<br>=57% |
| Criterion 4 | 3/230<br>=1.3% | 72/180<br>=40% |

| | | |
|---|---|---|
| the diagnosis is correct if pharmacology it reflects a good knowledge base of chemistry, anatomy, physiology, pathophysiology or pharmacology and clinical experience on behalf of the nurse | | |
| Criterion 5<br>the diagnosis is correct if it reflects the nurse having a working knowledge of what is normal | 3/230<br>=1.3% | 100/180<br>=56% |

## APPENDIX 16: COMPARISON BETWEEN THE NUMBERS OF ASSESSMENT-BASED NURSING DIAGNOSES FORMULATED BY THE PARTICIPANTS BOTH IN THE PRE-TEST AND THE POST-TEST

| | Pre-test<br>Number of Assessment-based nursing diagnosis identified and formulated by participants i.e. the five criteria was met. | Post-test<br>Number of Assessment-based nursing diagnosis identified and formulated by participants i.e. the five criteria was met. |
|---|---|---|
| Diagnosis 1 | 2 | 17 |
| 2 | 0 | 6 |
| 3 | 0 | 12 |
| 4 | 0 | 2 |
| 5 | 1 | 13 |
| | 46x5= 230<br>3/230= 1.3% | 36x5= 180<br>50/180= 28% |

**APPENDIX: 17 DESCRIPTIVE STATISTICS**

The Mean

| Pre-test Mean values | | Post-test Mean values | |
|---|---|---|---|
| Criteria 1 | 184/5diagnoses<br>=37% | Criteria 1 | 348/5<br>=70% |
| Criteria 2 | 6.47/5 diagnoses<br>=1.3% | Criteria 2 | 188/5<br>=38% |
| Criteria 3 | 9.17/5 diagnoses<br>=1.8% | Criteria 3 | 283/5<br>=57% |
| Criteria 4 | 6.47/5 diagnoses<br>=1.3% | Criteria 4 | 199/5<br>=40% |
| Criteria 5 | 6.47/5 diagnoses<br>=1.3% | Criteria 5 | 279/5<br>=56% |

**The Median**

| Pre-test Median values | | Post-test Median values | |
|---|---|---|---|
| Criteria 1 | 46% | Criteria 1 | 75% |
| Criteria 2 | 2.17% | Criteria 2 | 44% |
| Criteria 3 | 2.17% | Criteria 3 | 56% |
| Criteria 4 | 2.17% | Criteria 4 | 44% |
| Criteria 5 | 2.17% | Criteria 5 | 56% |

T**he Mode**

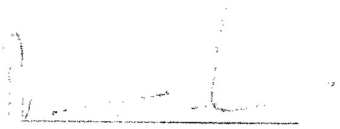
| Pre-test Mode values | | Post-test Mode values | |
|---|---|---|---|
| Criteria 1 | 41% | Criteria 1 | No mode |
| Criteria 2 | 0% | Criteria 2 | 44% |
| Criteria 3 | 0% | Criteria 3 | No mode |
| Criteria 4 | 0% | Criteria 4 | No mode |
| Criteria 5 | 0% | Criteria 5 | No mode |

## APPENDIX: 18 HOSPITAL GROUP ETHICS CLEARANCE CERTIFICATE

RESEARCH APPLICATION – T NAICKER

Date: July 2018

FOR APPROVAL



G VAN WYK Chief Human Resources Officer

NOTES

| | | |
|---|---|---|
| Locality | ○ | |
| Value of Study | ○ | Confirmed |
| Employee | ○ | Yes |
| Topic/Title | ○ | Development and implementation of a workshop to improve assessment-based nursing diagnoses by nurses at a private hospital |
| Impact | ○ | |
| Supported by hospital | ○ | Supported by: Nursing Manager |