

**STRESS AMONG STUDENT NURSES AT A UNIVERSITY IN THE WESTERN CAPE,
SOUTH AFRICA**

ANDILE MIKE MAFILIKA

STUDENT NUMBER: 2324073



**A MINI-THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF NURSING (NURSING EDUCATION)**

**UNIVERSITY *of the*
WESTERN CAPE**

SUPERVISOR: PROFESSOR P.D. MARTIN

CO-SUPERVISOR: PROFESSOR J. CHIPPS

DECEMBER 2022

ABSTRACT

Background: Nursing education and training places significant demands on commitment, dedication, and perseverance by nursing students. They experience increased levels of stress which negatively affect their learning abilities and thinking. Given the nature of the work nurses do, it is important to understand nursing students' levels of stress, sources of stress and stress management strategies in dealing with the harmful effects of stress.

Aim and objectives: This study aimed to investigate stress in student nurses at a university in the Western Cape by determining their perceived stress; describing their sources of stress and identifying the stress management activities used to manage stress.

Methodology: A quantitative, descriptive survey design was conducted on a sample of 350 undergraduate nursing students at a university in the Western Cape. Stratified random sampling was used to select the respondents. The Perceived Stress Scale (Cohen et al., 1983) and Assessing Stress among Nursing Students (AEEE) (Costa & Polak, 2009) and a self-developed checklist on stress management practices were used to collect data. The response rate was 68% (n=238). The data was analysed using Statistical Package for Social Sciences (SPSS), version 28.

Findings: Most of the respondents (173, 72.2%) experienced moderate stress levels. The highest source of stress was Professional Education (m=2.16, \pm 1.22), followed by Professional Communication (m=1.98, \pm 1.15) and Performance of Practical Activities (m=1.87, \pm 0.93). Theoretical Activity was rated the lowest (m=1.58, \pm 0.87) source of stress. Less than half (98, 41.6%) of the respondents participated in a hobby as a stress management activity when stressed. Of the 98, slightly more than a third (35, 35.7%) of the respondents reported engaging in sports and recreation. Slightly less than a third (32, 32.7%) of the respondents

reported that they engaged in spiritual hobbies. Substance use was reported by 37 (16.46%) of the respondents as a stress management activity.

Recommendations: Students must be prepared before they are placed in the clinical setting. Students need to be trained on self-help mechanisms that would assist them to effectively deal with stress.



KEYWORDS

- Prevalence
- Sources of stress
- Stress
- Stress management strategies
- Student nurses



LIST OF ACRONYMS AND ABBREVIATIONS

AEEE	Instrument for Assessing Stress among Nursing Students (<i>original acronym translated from Portuguese</i>)
BMREC	Biomedical Research Ethics Committee
CBT	Cognitive-Behavioral Therapy
CSSS	Centre for Student Support Services
EFT	Emotional freedom techniques
PSS	Perceived level of Stress Scale
SANC	South African Nursing Council
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization



DECLARATION

I declare that the study, *Stress among Student Nurses at a University in The Western Cape, South Africa*, is my original work; that it has not been submitted for any degree or examination at any other University, and that all the sources I have used, or quoted, have been indicated and acknowledged by complete references.

Full name: Andile Mike Mafilika

Signature:



Date: December 2022



ACKNOWLEDGEMENTS

I give all the glory to God Almighty for granting me strength and resilience to finish this degree.

I give thanks to my Supervisors, Prof. Penny Martin, and Prof. Jenny Chipps for their guidance and supervision. My journey would not have been possible without your wealth of knowledge, expertise, and painstaking support. My sincere gratitude to Prof. Martin for her support and motivation. A big thank you to the School of Nursing academic staff for their excellent work. Thanks to my former UWC colleagues for granting me time in their lectures to collect data from the students.

I wish to thank my wife, Andiswa for her unmeasurable support, love encouragement and patience. I am extremely grateful to have you as my wife. I know it was not easy but through the grace of God we made it. As Andraé Crouch say in his song that *“Through it all, I have learned to trust in Jesus. Through it all I have learned to trust in God. Through it all I have learned to depend on His Word”*. This song is testament to our journey thus far. To my daughters, thank you for your patience and understanding. I say thank you to my parents and brothers for supporting and praying with me.

To my friends and prayer partners, *“For Ever Joined”*, thank you for all your prayers and support. A special thanks to Mrs Thobeka Siganga for her support and prayers.

Finally, I wish to thank Dr. Sharon Vasuthevan, my Education Executive at Life Healthcare for affording me the opportunity to finish my studies. I am truly thankful to Life Healthcare for creating a conducive environment for its staff members to develop.

TABLE OF CONTENTS

Contents

ABSTRACT.....	ii
KEYWORDS.....	iv
LIST OF ACRONYMS AND ABBREVIATIONS.....	v
DECLARATION.....	vi
ACKNOWLEDGEMENTS.....	vii
CHAPTER 1.....	1
INTRODUCTION TO THE STUDY.....	1
1.1 Introduction.....	1
1.2 Background of the study.....	3
1.3 Problem Statement.....	8
1.4 Aim of the study.....	8
1.5 Objectives of the study.....	9
1.6 Significance of the study.....	9
1.7 Research methodology.....	9
1.8 Definitions of terms or key concepts.....	10
1.9 Chapter outline.....	11
1.10 Summary.....	12
CHAPTER 2.....	13
LITERATURE REVIEW.....	13
2.1. Introduction.....	13
2.2 The concept: Stress.....	13
2.2.1 Stress defined.....	13
2.3 Sources of stress.....	14
2.3.1 Performing clinical skills.....	14
2.3.2 Clinical environment.....	16
2.3.3 Time management.....	17
2.3.4 Professional communication.....	17
2.3.5 Professional education.....	18
2.3.6 Theoretical activity.....	19
2.4 Stress management.....	21
2.5 Stress Management Strategies.....	22

2.5.1 Healthy stress management activities	24
2.5.2 Unhealthy stress management activities.....	24
2.5.3 Social support.....	25
2.5.4 Positive problem-solving stress management activities.....	25
2.5.5 Emotion-focused stress management strategies	26
2.6 Stress and stress management activities among student nurses.....	27
2.7 Level of stress and source of stress	28
2.8 Source of stress and stress management activities.....	28
2.9 Level of stress and stress management activities.....	28
2.10 Summary	29
CHAPTER 3	30
RESEARCH METHODOLOGY	30
3.1. Introduction	30
3.2. Research approach.....	30
3.3. Research design	31
3.4. Setting	32
3.5. Population and sample	32
3.5.1. Study population.....	32
3.5.2. Sampling and sample size.....	32
3.5.3. Eligibility criteria.....	33
3.6. Data collection	33
3.6.1. Data collection instrument	33
3.6.2. Validity and reliability	34
3.6.3. Reliability.....	36
3.6.4. Data collection process.....	36
3.7. Data analysis	37
3.8. Ethics	38
3.8.1. Principle of respect for persons.....	39
3.8.2. Principles of non-maleficence and beneficence	39
3.8.3. Principle of justice.....	39
3.9. Summary	40
CHAPTER 4	41
RESULTS	41
4.1 Introduction	41
4.2 Sample realisation.....	41



4.2.1 Demographics of respondents.....	42
4.3 Perceived stress among nursing students	42
4.4 Overall levels of perceived stress and stress categories.....	44
4.5 Nursing students' sources of stress	45
4.5.1 Domain 1: Performance of Practical Activities stress	46
4.5.2 Domain 2: Professional Communication stress	49
4.5.3 Domain 3: Time Management stress	51
4.5.4 Domain 4: Environment stress.....	52
4.5.5 Domain 5: Professional Education stress.....	54
4.5.6 Domain 6: Theoretical Activity.....	56
4.6 Nursing students' stress management activities	58
4.7 Effectiveness of stress management activities in managing stress amongst nursing students .	58
4.7.1 Hobbies engaged when stressed	59
4.7.2 Reaction to stress activities	59
4.7.3 Substance use as stress management strategy	59
4.8 Summary	60
CHAPTER 5	61
DISCUSSION OF RESULTS	61
5.1 Introduction	61
5.2 Level of perceived stress amongst nursing students.....	61
5.3 Nursing students' sources of stress	64
5.4 Nursing students stress management activities	67
5.5 Use of healthy stress management strategies.....	68
5.6 Summary	68
CHAPTER 6	69
CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS.....	69
6.1 Introduction	69
6.2 Key findings	69
6.2.1 Objective 1: Determine the level of perceived stress in student nurses.....	69
6.2.2 Objective 2: Describe the nursing students' sources of stress	69
6.2.3 Objective 3: Identify stress management activities that students use to manage stress ...	70
6.3 Recommendations	70
6.3.1 Nursing Education	70
6.3.2 Research.....	71
6.3.3 Clinical practice	72

6.4 Limitations.....	72
6.5 Conclusion.....	73
REFERENCES.....	74



LIST OF APPENDICES

Appendix A: Ethics letter

Appendix B: Permission from the Registrar Participant

Appendix C: Permission from the Director

Appendix D: Permission from the Dean of the Faculty of Community and Health Sciences

Appendix E: Participant Information Sheet

Appendix F: Consent form

Appendix G: Questionnaire



LIST OF FIGURES

Figure 4.1 Domains of Sources of Stress

Figure 4.2 Levels of stress related to Professional Activities

Figure 4.3 Levels of stress related to Professional Communication

Figure 4.4 Levels of stress related to Time Management

Figure 4.5 Levels of stress related to the Environment

Figure 4.6 Levels of stress related to Professional Education

Figure 4.7 Levels of stress related to Theoretical Activities



LIST OF TABLES

Table 3.1 Population and sample

Table 3.2 Content validity

Table 3.3 Reliability (Internal consistency)

Table 3.4 PSS scoring key

Table 3.5 AEEE scoring key

Table 4.1 Demographics

Table 4.2 Perceived levels of stress- positive responses to stress

Table 4.3 Perceived levels of stress- negative responses to stress

Table 4.4 Overall mean ratings for perceived stress state

Table 4.5 Perceived stress levels categories

Table 4.6 Mean scores for sources of stress

Table 4.7 Stress related to Performances of Practical Activities

Table 4.8 Levels of stress related to Performance of Practical Activities

Table 4.9 Stress related to Professional Communication

Table 4.10 Levels of stress related to Professional Communication

Table 4.11 Stress related to Time Management

Table 4.12 Levels of stress related to Time Management

Table 4.13 Stress related to the Environment

Table 4.14 Levels of stress related to the Environment

Table 4.15 Stress related to Professional Education

Table 4.16 Levels of stress related to Professional Education

Table 4.17 Stress related to Theoretical Activities

Table 4.18 Levels of stress related to Theoretical Activities

Table 4.19 Activities to reduce stress

Table 4.20 Effective activities to reduce stress

Table 4.21 Hobbies to reduce stress

Table 4.22 Reasons for substance use



CHAPTER 1

INTRODUCTION TO THE STUDY

1.1 Introduction

Globally, stress in nursing education is a concern for college and university nursing faculties due to its negative impact on students' health and well-being (Labrague et al., 2017). The negative effects of stress may have an impact the on physical, psychological, social, and emotional wellbeing of nursing students with deleterious consequences, especially on coping in the academic environment.

Nursing education and training consists of both theoretical and clinical courses that reinforce and support each other. The theoretical part conducted in classrooms by way of lectures, case studies, and directive discussions, is complemented by clinical training to provide students with opportunities to develop the knowledge, skills, attitudes, and values taught in classrooms and laboratories. Furthermore, clinical training assists students in developing clinical skills, integrating theory into practice, and expanding their expectations of their future careers (Mlambo et al., 2021).

Recently, clinical teaching in nursing has improved due to advances in technology and the changing environments of health care settings. The introduction of certain technologies such as high-fidelity simulators and teaching methods such as structured scenarios in nursing curricula have had several advantages in enhancing students' knowledge and skills in addition to the knowledge and skills gained when practicing with actual patients in clinical settings (Lavoie & Clarke, 2017).

In most nursing programmes, clinical training begins in the first year and extends until graduation. As clinical training accounts for most of the nursing curriculum, stress has been commonly reported among nursing students, especially during the initial period (Ahmed & Mohammed, 2019). Nursing

students commonly experience anxiety and stress during their initial clinical training and practice (Lavina et al., 2021). Stress during this period can result in several negative outcomes, such as poor academic performance, elevated burnout levels, and diminished personal well-being (Sajid et al., 2015).

All these are detrimental to the achievement of the goal of training, which is to prepare competent nurses. However, depending on how students deal with stressors, stress could have advantageous or disadvantageous outcomes; while some students become more motivated when faced with stressors, others become anxious and depressed (Ahmed & Mohammed, 2019). Stress can be beneficial to students as it acts as a motivator for learning. However, chronic exposure to stress and failure to implement positive coping mechanisms may have detrimental effects on one's health, well-being, and academic performance (Labrague et al., 2017).

Therefore, it is vital to be aware of the factors that may prompt increases in the level of stress among nursing students and the adaptation techniques they utilise to overcome stressors. There is evidence to support the idea that helping students develop positive stress coping abilities is useful for their successful adaptation to several stressors throughout their learning (Kwaa & Esselfie, 2017). A recent integrative review highlighted the importance of recruiting representative samples to assess nursing students' stress and coping strategies in various institutions at specific years during their studies including prior to their clinical practice (Ahmed & Mohammed, 2019).

The future of nursing personnel is fundamentally dependent on professional education and training (Labrague et al., 2017). Nursing students are often new to nursing and caregiving and are learning to deal with many different people and situations. They may often be the youngest members of a healthcare team. As a result, they are exposed to many types of stress in their studies and training because of the need to learn to deal with various people and situations before practicing

professionally. High workloads, dissatisfaction with their clinical experience, and stressful clinical environments are three factors that contribute to the high level of stress they face in their first clinical practice program (Latif & Nor, 2019). These stressors both impact their learning and performance and decrease their physical and mental health and may also be detrimental toward the quality of caregiving moving forward (Abdullah et al., 2015).

1.2 Background of the study

Worldwide, students enrolled in health colleges reported high levels of academic stress, resulting in social, mental, and emotional distress (Pascoe et al., 2019). Professional health courses have been reported to be very exhausting and stressful, which requires herculean training and the ability to withstand highly stressful situations (Nebhinami et al., 2020). The prevalence rates of stress among health professional students are estimated to be around 14.3%–56% globally (Alsaleem et al., 2021). Therefore, it affects the students' academic achievements and their future careers. High levels of academic stress affect students' judgments, and their regular attendance, and lead to substance addiction, for example smoking cigarettes (Devkota & Shrestha, 2018). In addition, stress is linked to physical problems in the form of deprived immunity, gastrointestinal upset, poor appetite, nervousness, and depression that results in suicide (Lee, 2022).

It has been broadly acknowledged in the literature that nursing is a stressful profession, subject to different sources of stress (Lavoie-Tremblay, Sanzone, Aube & Paquet, 2021). Over recent decades, it has been observed that nursing students, like nursing professionals, also suffer from high levels of stress (Ching, Cheung, Hegney & Rees, 2020). Direct interaction between practitioner and patients and their families, resource, and staffing shortages in times of recession, having to deal with death and disease daily and, in general, the fact of working in an ever-changing and highly demanding environment have all led researchers to study stress in nurses (Devkota & Shrestha, 2018). Most of

the studies conducted in this field have focused on the stressors present in the clinical placement activities carried out in hospitals, considering these to be the principal source of stress (Ahmed & Mohammed, 2019).

Mahani and Panchal (2019) define stress as a psychological, physical, or emotional factor causing mental or physical tension. Stress is commonly caused by work pressure, illness, poor diet, monetary, restlessness and interpersonal relations. The clinical signs of a stressed person can include hypertension, tachycardia, nausea, palpitation, restlessness, among other factors. (Mahani & Panchal, 2019). Globally, different researchers have shown that undergraduate nursing students experience a substantial level of stress during their studies (Deasy et al., 2014). Mahani and Panchal (2019) mention different types of stress: Acute stress may be due to specific circumstances or occasions that involve newness, unpredictability, and risk. Deasy et al. (2014) describe eustress (positive pressure) as motivated, focused energy, intrinsic coping abilities, and improved performance but lasts for a short period while distress, which is negative pressure, is perceived as overwhelming coping abilities that are often linked to the concern of short and long-term periods. If untreated, it can harm one's mental health (Deasy et al., 2014).

Demir et al., (2014) alludes to various types of stressors such as academic, clinical and psychological which are discussed below:

Academic: Academic stressors include adaptation to a higher learning institution, study methods, student motivation, teaching strategies, psychosocial factors, the interaction between students, and lack of finances (Kwaa & Esselfie, 2017). Additionally, students are expected to participate in other activities such as research groups, monitoring, extension projects, events, and attending refresher courses. Such factors may lead to stressful conditions that could deter students' academic ability (Macedo de Freitas et al., 2018).

McCarthy et al. (2018) avow that the academic environment, tests, making errors, examinations, and assignments are the significant causes of learning stress amongst nursing students. Stressors related to the learning environment included crowded classes, exhaustive theoretical hours, and many lectures within a day. The number of examinations to be written and meeting assignment due dates were stressful (Payne & Mullen, 2014). The amount and difficulty of classroom material to be learned, not getting enough feedback about performance, and conflicts with peers were also reported as causes of stress (Perng et al., 2020). Langtree et al. (2018) also cited academic projects, extended work hours, difficulty handling assignments, and poor study methods as academic stressors amongst nursing students. Learning stress was also reported as nursing students perceive themselves to lack the knowledge and skills required for their studies and worry about poor academic achievement (Abdullah et al., 2015; Langtree et al., 2018).

Clinical: Nursing students are also subjected to the same clinical practice stress that professionals experience as they also work full time during clinical placement (Suarez-Garcia et al., 2018). Gurková and Zeleníková, (2018) assert that clinical practice is more stressful than the theoretical part and that nursing students have increased stress levels than those in other sciences. Several studies have alluded to stressors such as faculty and staff incivility; theory-practice gap; lack of competence; self-confidence; fearing to make a mistake; risk of harming patients or themselves and communication with staff, peers, and patients (Rafati et al., 2018).

Psychological: A degree of stress and uneasiness drives an increased attention span and ability to focus; however, excessive amounts of stress may result in psychological challenges, decreased retention, difficulty focusing, and misunderstanding of verbal communication (Martino, 2019). Pressure may potentially advance to anxiety, feelings of apprehension, and perplexity (Wallace et al., 2015). The sense of fear which includes unpreparedness for class, death of a patient, patient care,

and the act of accomplishing a new procedure, was also reported as causing stress amongst nursing students (Martino, 2019; Wallace et al., 2015). Stressors also identified include financial concerns, academic studies, health, family issues, and living situations (Demir et al., 2014; Labrague et al., 2017; Langtree et al., 2018; Perng et al., 2020). Homesickness was also reported to stress, particularly amongst the first years (Mahani & Panchal, 2019).

Furthermore, Langtree et al. (2018) reported interpersonal relations and environmental factors as common stressors:

Interpersonal relations are formed by interactions between nursing students, nursing personnel, and instructors; patient conditions and patient care; and peer interactions (Langtree et al., 2018).

Environmental factors can also create tremendous stress through daily routine changes, unfamiliarity with work environments and assignments, and excessively high workloads (Langtree et al., 2018).

This demonstrates the abundance of stressors to which students subjected to persistent distress can easily develop adverse physical and mental symptoms such as anxiety, insomnia, substance abuse, and inattention; grief and inability to display competence, burnout, and unhealthy coping strategies, or even dropping out of school (Ching et al., 2020). These situations significantly impact schools, clinical training schools, and the students themselves. Thus, effective coping strategies are critical for reducing the level of stress that nursing students are subjected to in their clinical internships.

For these reasons, coping strategies are crucial for nursing students. Folkman and Lazarus categorized two coping strategies: emotion-focused and problem-focused (Kwaa & Esselfie, 2017). Emotion-focused coping aims to reduce, control, and manage negative emotional responses that arise from stressful experiences (Ahmed & Mohammed, 2019). Problem-focused coping aims to alleviate stress by modifying the sources of stress (Labrague et al., 2017). Strategies to cope with

these stressors are crucial because the stressors can negatively impact the students' learning and performance. To ameliorate these detrimental effects on student well-being, stress management strategies such as breathing exercises, yoga relaxation, progressive muscle relaxation, worship, meditation, and mental imagery have been found useful (Kinchen & Loerzel, 2019). For instance, those students stated that they always attempt to seek emotional solace through their religion or spiritual beliefs, or they often pray or meditate. The second most common approach was using instrumental support, such as asking for advice or support from others about what they should do. The third most common approach was positive reframing, such as acting to alleviate challenging situations. When exposed to stress, the coping strategies employed by an individual are often affected by their perception of stress, problem-solving skills, and acquisition of social support systems (Joshi et al., 2018).

Lastly, the Covid-19 pandemic on the one hand, has propelled nursing and training into uncharted waters affecting clinical learning as scheduled clinical learning time was replaced with other forms of practice, such as virtual simulation; completing programs as quickly as possible with fewer practice hours and certain services were also put on hold (O'Flynn-Magee et al., 2021). Previous studies in Saudi Arabia (Alshowkan, 2022), Taiwan (Perng et al., 2020), Nepal (Thulung et al., 2019), Slovak and Czech (Gurková & Zeleníková, 2018) reported a high prevalence of stress disorders among students enrolled in health colleges. Furthermore, in Ethiopia, 47.7% of nursing students at Jimma University reported having stress (Shiferaw et al., 2015). Therefore, the need to examine stress and stress management within the South African context of nursing students is justified.

1.3 Problem Statement

Stress has been considered an integral feature of the life of student nurses. Student's life-related stress has been regarded as a significant contributor to the increased dissatisfaction with the nursing courses, rapid turnover, and high attrition rates among students not only in nursing (Perng et al., 2020). Several studies found that stress affects students' health and capabilities to cope with school demands; harms their academic performance, ultimately affecting providing quality care and the effectiveness of delivery of healthcare (Labrague et al., 2017; Langtree et al., 2018; Perng et al., 2020). A study conducted in Western Cape, South Africa by Rossouw (2018) found that financial issues were the main sources of stress amongst nursing students and religion was reported to be the most used coping strategy.

While a great deal of investigation has been performed about stress and managing strategies among nursing scholars internationally, there is a paucity of research conducted on stress in nursing students in South African especially in the Covid-19 pandemic and beyond. Given that the global hospital settings and provision of healthcare services do not match with those in South Africa, it is suitable to use the results of past international research to explain stress and its managing strategies amongst South African nursing students. The research questions that this study seeks to answer are (i) what is the perceived level of stress amongst nursing students?; (ii) what are the sources of stress the nursing students experience?; and (iii) what stress management activities do the nursing use to manage stress?

1.4 Aim of the study

To investigate student nurses' stress level and stress management activities at a selected university in the Western Cape.

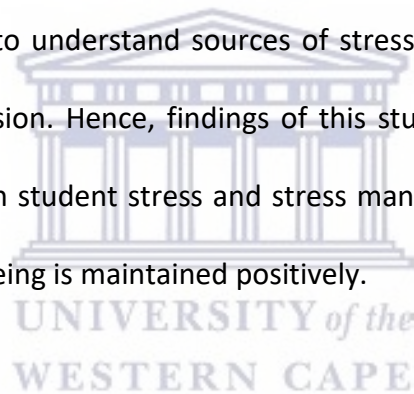
1.5 Objectives of the study

The main objectives are as follows:

- To determine the level of perceived stress in nursing students.
- To describe the nursing students' sources of stress.
- Identify stress management activities that student nurses use to manage stress.

1.6 Significance of the study

This study is important in the body of knowledge on stress and stress management amongst student nurses in South Africa. Lack of knowledge of stress amongst student nurses impedes learning and performance hence it is important for interventions from health and academic leadership. The study is important to nursing students to understand sources of stress and how they deal and prevent stress associated with the profession. Hence, findings of this study are important for health and higher education policy makers on student stress and stress management interventions to ensure nursing students health and wellbeing is maintained positively.



1.7 Research methodology

The study adopted a cross sectional survey, descriptive and quantitative research approach to examine stress and stress management amongst nursing students at a Western Cape University. A pretested questionnaire, Perceived level of Stress Scale- Assessing Stress among Nursing Students (PSS – AEEE) was used to collect data in this study. The research approach, design and instrument of this study is discussed in detail in chapter 3.

1.8 Definitions of terms or key concepts

Perceived stress is the degree to which situations in one's life are appraised as stressful (Cohen et al., 1983).

Operational definition: For the purposes of this study, perceived stress is how a student nurse appraises a stressful situation and is measured in questions one to ten on the PSS.

Sources of stress are the activities related to performance of practicals, professional communication, time management, academic environment, professional education, and theoretical activities (Costa & Polak, 2009).

Operational definition: For the purposes of this study, it refers to the student nurse's methods for determining potential sources of stress. The Costa and Polak (2009) Assessing Stress Among Nursing Students (AEEE) Likert scale is used to measure these sources of stress.

Stress management strategies are a range of strategies to reduce and manage stress including yoga, mindfulness, exercise, Cognitive-Behavioral Therapy (CBT), problem solving (Amanvermez et al., 2020).

Operational definition: For the purposes of this study, stress management strategies are a range of practices and or psychotherapy activities that student nurses use to manage their perceived stress levels, frequently with the goal of and the motivation to improve their functioning. The stress management strategies are determined in a form of a checklist.

Student nurse means a person registered with SANC as a learner nurse as stipulated in sections 32(1) and (2) of the Nursing Act 33 of 2005.

Operational definition: For the purposes of this study, student nurse is registered at the university for an undergraduate nursing programme.

1.9 Chapter outline

This introductory chapter provided a background for this research study. In addition, the problem statement, aim, objectives, significance, research methodology and the definitions of key concepts.

A brief description of the research methodology was outlined.

The rest of the thesis is presented as follows:

Chapter 2: Literature review- in this chapter, literature review, which supports the argument that culminated in the research aim and objectives. In addition, stress, stress management concept, sources of stress and the correlation between levels of stress and stress management activities are discussed based on theory and past empirical studies reflecting the literature gaps.

Chapter 3: Research methodology- in this chapter a detailed explanation of the research design and methodology used in this study is given.

Chapter 4: Research findings- in this chapter, the results obtained from the data analysis is presented in tables and graphs.

Chapter 5: Discussion of the findings- the findings of this study are interpreted and discussed within the body of empirical literature on stress and stress management activities.

Chapter 6: Conclusion, limitations, and recommendations- in this chapter the study is concluded by reflecting on the research objectives and the aim of the study and considering the findings in chapter 4. The limitations of the study areas were identified. Finally, the study concluded with possible areas for further research.

1.10 Summary

This chapter introduced the research subject of stress and stress management activities and laid the foundation of the study in the introduction, background, problem statement, aim, objectives, significance, research methodology and definitions of key concepts.

The next chapter is chapter two in which literature on stress and stress management of nursing students is reviewed.

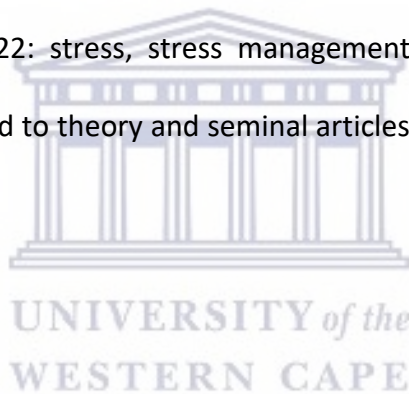


CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

This chapter presents the literature review to show what is known and what is not known about stress and stress management of nursing students. The literature review is based on past studies and existing theories relevant to the research problem (Creswell, 2014). Several academic databases were searched which include EBSCOhost, MEDLINE, PubMed, Wiley Online Library, Science Direct, Elsevier, google scholar and MA Healthcare. The most common terms used for the search for articles published between 2018 and 2022: stress, stress management, sources of stress, and nursing students. A few articles that related to theory and seminal articles were used which were published more than 5 years ago.



2.2 The concept: Stress

The main concept is discussed as follows:

2.2.1 Stress defined

According to Fink (2017), stress is the body's natural defense against predators and danger. Similarly, stress is defined as one's body reaction when it comes across situations and changes that expect an adjustment or a response and stressor is the stimulant behind whatever the body reacts to (Shahsavarani et al., 2015). Stress is a common element in the lives of every individual, regardless of race or cultural background (Yikealo et al., 2018). It can have both negative and positive impact depending on the individual and their level of coping, and strategies adopted (Smith et al., 2016).

Lavoie-Tremblay et al. (2021) also defined stress as “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her own resources and endangering his or her well-being”. As such, stress can be absolute in the case of a real threat or danger, or it can be relative and be based on the interpretation of an individual (Ekpenyong et al., 2013). Thus, stress is often a highly individualised response to the environment that varies from person to person (Fink, 2016). When an individual is unable to cope with these demands, the imbalance gives rise to stress (Bhui et al., 2016).

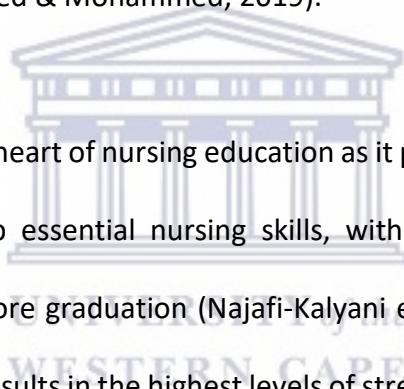
2.3 Sources of stress

Sources of stress are the activities related to performance of practicals, professional communication, time management, academic environment, professional education and theoretical activities (Costa & Polak, 2009). Sources of stress are also commonly known as stressors. Shdaifat et al. (2018) pointed out that nursing students suffer from increased academic stress and clinical skills training. Stress affects their academic achievement and wellbeing. Further, nursing students believe in the stressful nature of their field and constantly look for different stress management strategies. Latif and Nor (2019) identified six stressors during the clinical teaching in nursing (CTN) programme: (i) stress due to patient care, (ii) stress due to clinical tutors and nursing professionals, (iii) stress resulting academic workload, (iv) stress from fellow nursing students, (v) stress due to lack of knowledge and professional competencies, and (vi) stress from the clinical practice. These are discussed in the following sections.

2.3.1 Performing clinical skills

According to Ahmed and Mohammed (2019), nursing students usually experience anxiety when they are in the clinical field, especially for first-year nursing students when performing practical activities.

This is also known as clinical stressors. This is because they do not have the skills and knowledge to perform the clinical procedures in the wards. This causes them to be stressed and has an impact on their self-esteem. Nursing students described implementing new procedures as “stressful”, “scary”, and causing “butterflies and flutters” (Latif & Nor, 2019). Mabusela and Ramukumba (2021) found that nurses expressed concern about lack of experience, in implementing technical skills, and the need for more time in the ward. Similarly, Latif and Nor (2019) found that students frequently identified preparing for clinical assignments as stressful. The area of particular concern was the writing of care plans. Too much responsibility was found to be stressful for nursing students while in clinical practices (Hägg-Martinell et al., 2020). Nursing students also perceived a heavy workload as one of their clinical stressors (Ahmed & Mohammed, 2019).



However, clinical learning is at the heart of nursing education as it provides rich opportunities to gain hands-on experience and develop essential nursing skills, with programs requiring a minimum number of hours to complete before graduation (Najafi-Kalyani et al., 2019). As such, the clinical component of nursing education results in the highest levels of stress for students with past research consistently showing that nursing students experience moderate to severe levels of stress during clinical practice (Labrague et al., 2017).

A study at the Kubang Kerian Nursing College, Kelantan, by Latif and Nor (2019) found that clinical assignment was the main stressor among nursing students. One student in the study conducted by Yasmin et al. (2020) reported that *“care planning in general has been very stressful for me. It takes me forever to write up care plans. It is good, but it takes too much time”*. The findings of a study carried out by Latif and Nor (2019) showed that nursing students also perceived heavy workloads as one of their clinical stressors. In clinical practice, stressors among nursing students during clinical

practice were significantly correlated with the care of the terminally ill, time pressure for certain activities, clinical evaluations, performance evaluations and frequent changes in health services (Alsaqri, 2017). However, more recent studies, in which supernumerary status was incorporated into the education of nursing students, found that increased responsibility does not produce stress (van Graan et al., 2016). Supernumerary status in nursing refers to the process by which clinical skills acquired through structured clinical learning environment facilitated by academic staff or a member of the nursing staff (McGowan, 2005).

2.3.2 Clinical environment

Many times, the environment in the ward may be unfriendly, which adds to the student's sense of self-doubt and insecurity (Jamshindi et al., 2016). The stressful nature of the clinical environment, along with concern about one's own well-being, elicits an appraisal by the nursing student that may result in threat or challenge (Latif & Nor, 2019). However, while some students might perceive a particular clinical incidence and setting to be challenging, the same clinical incidence might create fear, anxiety and related emotions for others (Luisa et al., 2020).

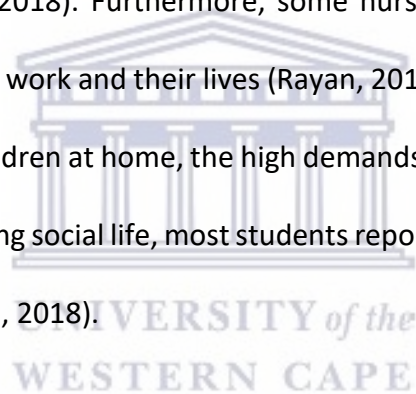
The clinical environment for students can be very stressful through demonstration of technical skills, unpredictability, the fear of making mistakes or harming a patient, lack of knowledge about patient medical conditions, and being witness to the death and suffering of patients (Ching et al., 2020). Furthermore, unfamiliar environments, new role expectations, feeling unprepared, high workloads and patient care responsibilities all contribute to psychological distress (Labrague et al., 2017).

Generally, nursing students do not have the same responsibility in the individual care of patients in clinical practice as registered nurses, however they are exposed to some of the same stressors (Ahmed & Mohammed, 2019). Examples of the same stressors include the relationships with other professionals, the notorious ranking that exists in hospitals, difficult situations regarding the

treatment of patients and dealing with family members and the way they experience the death of the patients they care for (Onieva-Zafra et al., 2020).

2.3.3 Time management

A study by Lavoie-Tremblay et al. (2021) of Canadian undergraduate nursing students found that second-year students had high clinical performance expectations and a lack of time for their personal lives was a main source of stress. Time management is regarded as one personal stressor that nursing students face throughout their studies. As some nursing students maintain part-time employment positions while studying, the responsibility of their job is also a major source of additional stress to manage their time (Rafati et al., 2018). Furthermore, some nursing students are older and have children and are unable to balance work and their lives (Rayan, 2019). Whether the nursing students have part-time employment or children at home, the high demands of nursing educational programs impact their ability to have a fulfilling social life, most students report having no or little opportunities for leisure time (Dube & Mlotshwa, 2018).



2.3.4 Professional communication

According to Latif and Nor (2019), problematic interpersonal relationships with clinical preceptors and instructors influences whether student clinical experiences are perceived as either positive or negative. Conversely, a sense of belonging and positive relationships with the nursing colleagues, especially their preceptors, positively impacts student motivation, learning, confidence, and self-concept (Grobeck, 2016).

Another important factor about the clinical environment is the relationships with members of the health institution (Leary, 2015). An unfriendly clinical environment occurs when students experience peer pressure and are ignored or are disregarded by nursing staff (Labrague et al., 2017). Being

intimidated or feeling unwelcomed in this environment can lead to feelings of decreased sense of belonging (Leary, 2015). A decreased sense of belonging has been associated with feelings of anger, distress and detachment among nursing students (Ashktorab et al., 2017).

2.3.5 Professional education

According to Ching et al. (2020), nursing education is one of the most stressful and challenging professions worldwide. More so than other health-related disciplines, it has been well-established that nursing students experience higher levels of stress than other non-nursing university students (Tharani et al., 2017). As they advance through their programs of study, nursing students are required to meet multiple theoretical and clinical requirements, giving rise to their stress (Rayan, 2019). In the classroom, students learn and develop relevant knowledge to provide care for their patients by learning about nursing theory and principles. In the clinical environment, students apply theoretical principles learned in the classroom and 'learn by doing'. By experiencing the real work environment, they learn required psychomotor skills and become socialized into the professional nursing role (Durgun-Ozan et al., 2020). Although clinical education provides rich opportunities to gain hands-on experience, the clinical component of nursing education has been identified as providing the highest source of stress for nursing students (Yuksel & Bahadir-Yilmaz, 2019).

Nursing students coexist with other stressors that are typical considering their role as students, such as those related with their academic program and their role as nursing students (Priesack & Alcock, 2015). This is because, as opposed to other degree programs, nursing students are in touch with the job market which requires a certain responsibility in the wellbeing of their patients, distancing them, at times from the student campus life and especially, from normal social activities enjoyed by their peers (Onieva-Zafra et al., 2020).

However, Lavoie-Tremblay et al. (2021) reported that final-year students had the prospect of graduating and transitioning into the work environment was the main source of their stress.

A recent study showed that second-year nursing students report the highest levels of stress, compared to other years, due to their perception of having inadequate knowledge and skills in their clinical rotations (Alsaleem et al., 2021). However, other studies show that the final year of nursing education is the most stressful year (Lavoie-Tremblay et al., 2021). The high levels of stress experienced by final-year students were attributed to demanding clinical settings that require students to master more challenging technical skills and have more in-depth knowledge about patients' medical conditions.

2.3.6 Theoretical activity

Nursing programs are competitive and challenging, with programs of study expanding their content (Deasy et al., 2014). This is also known as academic stress. This newfound reality reflects the changes the field of nursing has undergone in the past few decades. Nursing education has moved away from 'learning on the job' with traditional apprenticeship models of education towards university-based programs (Al-Gamal et al., 2018).

Current curricula have increased content, including theoretical content to reflect and meet the needs of the increased professionalisation of nursing, including its scope of practice (Tharani et al., 2017). Furthermore, nurses are providing increasingly complex care for patients, influenced by a growing and aging population, increased comorbidities, shorter lengths of stays and decreasing fiscal budgets and human resources. Thus, these factors require nursing education models to adapt and equip their students with the tools to approach the changes the profession is facing (Thulung et al., 2019). As a result, intensive theoretical hours, busy daily schedules with many different lectures, and long

studying hours for course work were cited as academic stressors for nursing students, particularly for first-year students (Abdullah et al., 2015). Other sources of academic stress include questioning during lecturing, worrying about testing and evaluation, meeting deadlines for assignments and fear of failure (Suarez-Garcia et al., 2018). Similarly, research with university students from other disciplines also identified several similar academic stressors such as performance pressure, high workload, self-confidence, interpersonal difficulties with instructors, and time constraints (Abdullah et al., 2015). This finding is similar to Yasmin, Khalil and Mazhar (2020) study, who reported that the significant amount of time students spent on writing assignments was described as stressful.

However, the practical training of a nurse's education has been reported to be much more stressful than academic training. Also, the perceived lack of knowledge and skills are one of the common stressors for many students (Yildiz et al., 2015). Furthermore, the first experience in clinical practice includes stressors such as fear of making mistakes, having to handle emergency situations, irregularities in clinical practice and visiting specialized units (Onieva-Zafra et al., 2020).

In a study of nursing students by Thulung et al. (2019), it was found that the major stressors were academic assignment and workload amongst others. The stress level is significantly related to the academic level the students are involved in. It showcased that the senior students displayed less stress level than the juniors who have just started out. Among the Bachelor of Science and Bachelor of Nursing students, the level of stress decreased noticeably until the last year of the academic experience. This might have to do with the fact that with more exposure and progress to higher study, the skills and mastery, as well as the experience, makes it easy to deal with their stressors. According to Devkota and Shrestha (2018), and Abdullah et al. (2015), the conclusion was similar, supporting these findings where the stress and the effects were low in seniors. In contrast to this, a study in Montreal, Canada, to understand sources of stress in different years of study by Lavoie-Tremblay et

al. (2021), found that first-year students had high stress levels related to their academic courses. Similarly, Ribeiro et al. (2020) found that for first-year nursing students, the highest rated stressors were theoretical activities, including the difficulty of learning new theoretical content and meeting all course expectations.

However, according to Nurdat Sohail in Lahore, the results were contradicting. In that study, the seniors displayed higher levels of stress and morbidities in comparison to the students in junior level (Bhavani, 2018).

2.4 Stress management

Research conducted on stress alludes to a growing belief that stress can be managed. These stress management strategies are referred to as the specific efforts, both behavioural and psychological, that people employ to master, reduce, tolerate, or minimise stressful events (Latif & Nor, 2019). Stress management strategies are a range of strategies to reduce and manage stress including yoga, mindfulness, exercise, Cognitive-Behavioral Therapy, problem-solving (Amanvermez et al., 2020; Bhurtun et al., 2019). Al-Gamal et al. (2018) and Pinar et al. (2018) examined sources of stress and coping strategies amongst undergraduate nursing students in clinical practice. Taking care of the patient was ranked the highest source of stress and problem-solving was reported as the coping strategy to deal with the stress experienced.

According to Bhurtun et al. (2019), students met modest to higher stress levels in their training, with transference and problem solving being the most used management techniques. Similarly, in another study, students applied either adaptive or maladaptive as stress management strategies (McCarthy et al., 2018).

Thus, due to the nature of nursing which invariably leads to stressors, students are constantly in search of stress management mechanisms (Gurkova & Zeleníková, 2018). These various stress management strategies are discussed in the below sections.

2.5 Stress Management Strategies

According to Biggs et al. (2017), managing stress involves the cognitive and behavioral efforts that are made to reduce the external and internal demands being placed on the individual. Folkman's theory and the transaction theory of stress management suggest that individuals are constantly appraising their environment to detect stressors which, when detected, generate emotions that motivate the initiation of stress management strategies (Devonport, 2011). When successful, the stress management strategies elicit a favorable outcome but when unsuccessful they lead to distress (Kabir, 2017). Ching et al. (2020) recommended offering interventions to enable nursing students to fit actively into the clinical environment. It was suggested that to encourage nursing students' engagement in reflection to facilitate self-awareness and to encourage flexible use of personal and external resources (Ching et al., 2020).

Nursing students view the sources and management strategies for stress during their studies differently (Shdaifat et al., 2018). Kinchen and Loerzel (2019) researched nursing students and the use of holistic therapies for relieving stress. Among the ways that the students managed with school-related stress included meditation, prayer, physical activity, management of time, socialization, artistic pursuits, distraction, and animal connections (Kinchen & Loerzel, 2019). Student nurses were receptive to holistic treatments but needed experiential or informational education on holistic therapies in nursing curricula (Kinchen & Loerzel, 2019).

Using effective stress management strategies among nursing students improves the value of care for patients. In Saudi-Arabia, the most applied stress management strategy amongst nursing students in

medical practice was problem-solving (Al-Gamal et al., 2017). One such strategy is Cognitive-Behavioral Therapy programs. Cognitive-Behavioral Therapy is critical because such programs are used in stress management, self-esteem, and self-efficacy facing nursing students (McCarthy et al., 2018). Through pilot research, the researchers measured the effects of a 10-week Cognitive-Behavioral Therapy program for stress management through a quasi-experimental approach (McCarthy et al., 2018). The students considered competency in stress management, self-esteem, and self-efficacy to be high a year after the program (McCarthy et al., 2018).

Liang et al. (2019) avow that nursing students should be resilient to overcome challenges that are stressful. As such, Liang et al. (2019) aimed at establishing and applying a Resilience Enhancement-based plan for nursing students in Taiwan in their Last Mile workshop. Participants attained positive results through a Participatory Action Research (PAR) method and identified three outcomes: increasing self-exploration, constructing resilience, and promoting competence and confidence. The PAR-based project assisted students in developing strength by improving their skills in nursing and knowledge and applying positive behavior and thinking whilst faced with stressful situations (Liang et al., 2019).

Latif and Nor (2019), reported that the top five stress management strategies for the undergraduate nursing students in their study were religion, the use of instrumental support, acceptance, active efforts to cope and positive reframing, the majority of which were emotion focused stress management strategies. Stress management is a constantly changing cognitive and behavioral effort to manage specific external and/or internal demands that are experienced as taxing or exceeding the resources of the person (Ahmed & Mohammed, 2019). However, managing stress, for a student nurse, is a dynamic and ongoing process, aimed at survival, growth, and maintenance of individual

integrity (Kinchen & Loerzel, 2019). Despite this, according to World Health Organization (WHO)/ European Hematology Association guidelines, there are no standards for stress management strategies; instead, they depend on socio-economic factors (Latif & Nor, 2019).

Nevertheless, there is still a need for more research on stressors relating to clinical practice and the use of coping strategies among the South African nursing student population to fill the gap in understanding. Thus, it is important for researchers to explore the use of effective coping strategies to help nursing students overcome stress and maintain their health at an optimum level.

2.5.1 Healthy stress management activities

For the purposes of this study, the researchers classify healthy lifestyle behaviours used to reduce stress as healthy stress management activities. In the study by Latif and Nor (2019), most student nurses tended to use more healthy stress management strategies such as religion, instrumental support than negative or unhealthy ones such as substance abuse. Similarly, finding of health stress management strategies by Hsiao et al. (2010), who reported that the most frequently used stress management strategies among nursing students at Chiang Mai University were seeking social support (62.25%), systematic problem solving (23.73%) and accepting responsibility (8.47%). In another study by Onieva-Zafra et al. (2020), it was found that the healthy stress management strategies most frequently used by students were problem-solving, followed by social support and cognitive restructuring. In a study by Thulung et al. (2019), it was found that students relied on various stress management mechanisms where the majority relied on active coping, acceptance, and planning.

2.5.2 Unhealthy stress management activities

According to Alsaqri (2017), unhealthy stress management strategies disturb the students' academic achievements and their future careers. Such unhealthy remedies result from high levels of academic

stress affect students' judgments, and their regular attendance, and lead to substance addiction, for example smoking cigarettes (Gurková & Zeleníková, 2018). In addition, stress is linked to physical problems in the form of deprived immunity, gastrointestinal upset, poor appetite, nervousness, and depression that can result in suicide as a stress management option (Devkota & Shrestha, 2018).

2.5.3 Social support

In a study by Baqutayan (2011), a notable stress management strategy found in students from all years of the programs was seeking social support. This is a common stress management strategy well-supported by the literature. Social support acts as a protective factor for stress, as this strategy can either prevent stress or facilitate a healthy response to the situation (McCarthy et al., 2018). Evidence demonstrates that communicating with others about stressful experiences is positively correlated with well-being and psychological stability (Kabir, 2017). For nursing students, they communicate with their families, spouses and instructors (Duffy, Avalos & Dowling, 2015).

However, for many nursing students, the most important source of social support are their nursing peers (McCarthy et al., 2018). When communicating with their peers, discussing shared learning experiences was an effective strategy for the emotional management of stress (McCarthy et al., 2018). These informal conversations provide reassurance, comfort, and a validation of their feelings as they provide an opportunity and safe space to express their frustrations and concerns (Duffy et al., 2015).

2.5.4 Positive problem-solving stress management activities

According to Smith et al. (2016), discussion with peers can also provide solutions to dealing with a stressful situation, as these discussions involve efforts to gain information or emotional support to solve a problem. This form of stress management is called positive problem-solving stress management technique. In a study by Shdaifat et al. (2018), it was found that students considered

moderate stress levels attributed to the management of peers, daily life, and assignments mostly using problem solving to manage their stress.

Positive problem-solving stress management involves developing a strategy to directly address the cause of stress (Labrague et al., 2017). Al-Gamal et al. (2018) reported that self-control as a strategy was used by final year students to manage their stress. This is because more senior nursing students gained valuable experiences during their first or second year of study which helped them learn how to employ positive problem-solving stress management strategies more effectively. This improved use of problem-solving stress management strategies is likely a contributing factor to their increased perceptions of wellbeing (Kabir, 2017).

2.5.5 Emotion-focused stress management strategies

According to Joshi et al. (2018), stress management is the individual cognitive evaluation towards stress. Emotion-focused stress management is directed at regulating emotional response to a problem. This form of managing stress is more likely to be used when someone believes that nothing can be done to modify the harmful, threatening, or challenging situations (Ahmed & Mohammed, 2019). However, stress managing strategies vary according to the characteristics of the individual and the context where the stressors are found (Onieva-Zafra et al., 2020). Emotional-based stress management strategies appear to be the least effective strategy (Labrague et al., 2017).

However, it is important to note that low or moderate levels of stress may enhance students' motivation, leading to greater perseverance when studying and achieving future goals (Yasmin et al., 2020). Conversely, high levels of stress can have a negative influence on students, leading to depression and despair, and therefore affecting students' health and academic level (Riley et al., 2019). Stress is unavoidable and, in most cases, it is difficult to overcome, however, a good coping strategy may help students to improve their academic results (Wang et al., 2019).

Stress management mechanisms are essential when trying to deal with the stress and anxiety that nursing students face daily (Lavina et al., 2021). Past studies have shown that stress levels in nursing students may increase or decrease during their educational training depending on stress management emotional-based strategies. However, as noted by Jimenez, Navia-Osorio and Diaz (2010), these differences regarding stress levels over the course of professional training should be considered with caution, as different programs exist in each country. Hence, the need in this study, to identify stress and stress management activities of student nurses at a South African university.

2.6 Stress and stress management activities among student nurses

Latif and Nor (2019) found six domains of stressors during clinical practices namely: taking care of patients; clinical educators/instructors and ward staff; clinical assignments and workload; peers and nursing students from other colleges; lack of professional knowledge and skills and clinical environment were statistically significant correlation with stress management strategies. Onieva-Zafra et al. (2020), found a significant relationship between the total amount of perceived stress and the following domains of the stress management behaviour inventory: problem solving ($r = -.452, p < .01$), self-criticism ($r = .408, p < .01$), wishful thinking ($r = .459, p < .01$), social support ($r = -.220, p < .01$), cognitive restructuring ($r = -.375, p < .01$), and social withdrawal ($r = .388, p < .01$). Thulung et al. (2019) reported that levels of stress had a significant association with levels of managing stress. However, Lee (2022) found that nursing students tended to adopt ineffective stress management strategies more frequently when they perceived a high level of stress from nursing personnel ($r = .12, p < .05$), peers ($r = .15, p < .05$), lack of professional knowledge and skills ($r = .14, p < .05$), internship environment ($r = .15, p < .05$) and overall stress of the clinical internship program ($r = .17, p < .01$). No quantitative studies were found that ascertain whether sources of stress correlate with stress management activities. A recent study by Lavoie-Tremblay et al. (2021), qualitatively explored the

sources of stress and stress management of undergraduate nursing students. Hence, the need for this study to understand the association between the stress and stress management domains.

2.7 Level of stress and source of stress

Shipton (2002) found that the significant amount of time students spent on writing assignments was described as raising the stress level of students. Students in Shipton's study alluded to being stressed when completing the care plan, which took a considerable amount of time, and they found themselves without time to complete the task (Shipton, 2002). However, contrary to this, Evans and Kelly (2004) argued that increased responsibilities in nursing students do not produce stress.

2.8 Source of stress and stress management activities

Ahmed and Mohammed (2019) who found a significant relationship between stressors and stress management activities. Shaban et al., (2012) recommended that students should not use one coping strategy but rather a combination of stress management activities to deal with their stress. Additionally, a study by Lavoie-Tremblay et al., (2021) found that even though nursing students go through different sources of stress during their training, they use the same coping strategies regardless of the year they are studying.

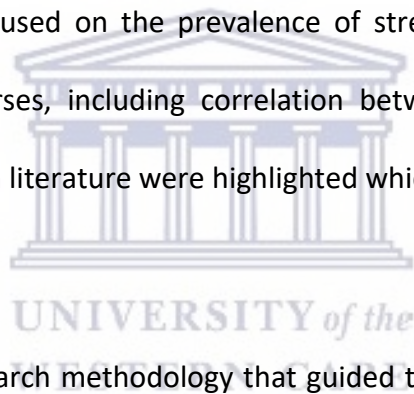
2.9 Level of stress and stress management activities

Onieva-Zafra et al. (2020) found that the levels of stress and anxiety vary during students' educational training, depending on their ability to adopt behavioural strategies for coping with stress and other factors. According to Bhurtun et al. (2019), students experience modest to higher stress levels in their training, with transference and problem solving being the most used management techniques. It is important to note that low or moderate levels of stress may enhance students' motivation, leading

to greater perseverance when studying and achieving future goals (Yasmin et al., 2020). Conversely, high levels of stress can have a negative influence on students, leading to depression and despair, and therefore affecting students' health and academic level (Riley et al., 2019). However, stress is unavoidable, and in most cases, it is difficult to overcome. A good coping strategy may help students to improve their academic results (Wang et al., 2019). Contrary to this, Lee (2022) found that nursing students tended to adopt ineffective stress management strategies more frequently when they perceived a high level of stress from nursing personnel ($r = .12, p < .05$), peers ($r = .15, p < .05$), lack of professional knowledge and skills ($r = .14, p < .05$).

2.10 Summary

In this chapter, the literature focused on the prevalence of stress, sources of stress and stress management among student nurses, including correlation between stress domains and stress management domains. The gaps in literature were highlighted which this study seeks to examine.



The next chapter details the research methodology that guided the collection of primary data for this study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1. Introduction

This chapter presents the research methodology followed to collect data and guide the entire research process. The chapter explains and justifies the adopted research approach, research design, setting, population, sample, exclusion and inclusion criterion, data collection instrument, reliability and validity, data analysis and ethics consideration.

3.2. Research approach

A research approach refers to the procedure, which the researcher follows, when conducting a research study, and spans all decisions made, from broad assumptions, to detailed methods of data collection and analysis (Creswell, 2014). A quantitative approach, using a descriptive survey method was chosen to guide the research process. This method is most appropriate for the research because the researcher needs to describe the phenomenon in detail (Brink et al., 2018).

Quantitative research is defined as the investigation of phenomena that is responsive to precise measurement and quantification, often involving a rigorous and controlled design (Polit & Beck, 2017). The phenomenon of stress, sources of stress, stress management can be measured and quantified; therefore, the quantitative research approach was employed, using questionnaires to collect the data, which were analysed through the Statistical Package for Social Sciences (SPSS), version 28.

3.3. Research design

When conducting a research study, a research design is an outline, which maximizes control over determinants that could cause an interference with the validity of the results (Saunders et al., 2016).

A descriptive, survey study design was selected for this study.

A descriptive study design refers to a variety of designs, developed to acquire more facts regarding the attributes in a specific study field, as well as to give a picture of situations, as they occur naturally (Saunders et al., 2016). In all cases, descriptive research examines a situation the way it is (Creswell, 2014). It does not do any changes, or modification of the situation that is being investigated, nor is it meant to determine cause-and-effect relationships (Cooper & Schindler, 2014). Descriptive research design yields quantitative data that can be analysed through statistical analysis (Bryman & Bell, 2013). Survey research is non-experimental research that acquires data regarding activities, beliefs, preferences and attitudes of people, by means of direct questioning (Saunders et al., 2016). Survey research is one of the descriptive research designs that usually uses face-to-face interviews, telephonic interviews, or questionnaires (Bryman & Bell, 2013). Survey research involves obtaining data about one or more groups of people, regarding their characteristics, opinions, attitudes, or previous experiences (Cooper & Schindler, 2014). The fundamental aim is to gain information concerning a population, by conducting surveys among a sample of that population (Saunders et al. 2016). Consequently, the descriptive survey design was used, as the researcher wanted to acquire information about the respondents' experiences of stress and stress management, as how it occurs, naturally, by administering questionnaires, with the intention of summarising the collected quantitative data through statistical analysis and generalising the results.

3.4. Setting

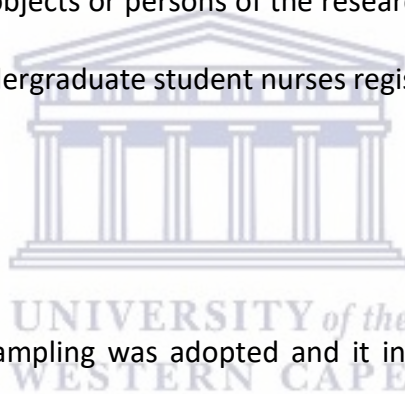
Brink et al. (2018) describe research setting as a data collection place. This study was conducted in a School of Nursing at the University in the Western Cape Province, Cape Town. The school has a diverse student population that spans South Africa and is one of the largest residential universities offering undergraduate nursing programmes.

3.5. Population and sample

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

3.5.1. Study population

This refers to the whole group of objects or persons of the researcher's interest (Brink et al., 2018). The population includes all the undergraduate student nurses registered for the 2022 academic year as at 31 March 2022 (N=521).



3.5.2. Sampling and sample size

In this study, stratified random sampling was adopted and it involves dividing a population into subgroups or strata (Brink et al., 2018). The sample is described as elements or subset of the population considered to be included in the research, while selection is a process of picking the population sample under investigation to gather data about a phenomenon (Saunders et al., 2016). Calculation of sample size was done using the Raosoft online calculator with the level of confidence interval of 95% or margin error of 5%. Therefore, the study's sample was 350. Accordingly, the sample was divided into year level of study, namely Bachelor of Nursing first to the fourth year of study as illustrated in table 3.1.

Table 3.1: Population and sample size

Programme	Number of registered students (As at 31 March 2022)	Sample size

B Nursing first year	53	47 (88.67%)
B Nursing second year	90	73 (81.11%)
B Nursing third year	118	91 (77.12 %)
B Nursing fourth year	254	154 (60.63%)
Total	515	365 (70.87%)

3.5.3. Eligibility criteria

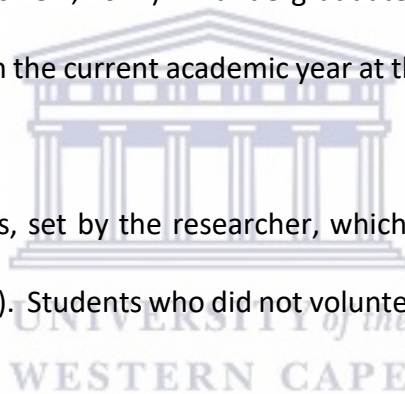
Includes inclusion and exclusion criteria.

Inclusion criteria

Inclusion criteria are the requirements, set by the researcher, which prospective respondents must meet, to be part of the sample (Creswell., 2014). All undergraduate student nurses from the first year to fourth year of study registered in the current academic year at the university in the Western Cape.

Exclusion criteria

Exclusion criteria are requirements, set by the researcher, which exclude respondents from being part of the sample (Creswell., 2014). Students who did not volunteer to participate in the study were excluded.



3.6. Data collection

Data collection is defined as a process of gathering information, to address a research problem (Saunders et al., 2016). The data collection instrument, validity and reliability of the instrument and data collection process, are discussed in this section.

3.6.1. Data collection instrument

A self-administered, structured Likert-type questionnaire on perceived levels and sources of stress and stress management strategies was used in this study (Appendix G). The questionnaire was based on the existing instrument to measure Perceived level of Stress Scale (PSS) developed by Cohen et

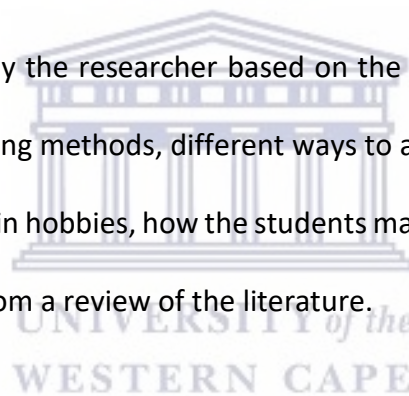
al., (1983), existing instrument to Assess Stress among Nursing Students (AEEE) translated from Portuguese developed by Costa & Polak, (2009) and a checklist on sources of stress. The questionnaire was structured as follows:

Section A: Demographic information: age, year of study and gender;

Section B: The Perceived level of Stress Scale (PSS-10) developed by Cohen et al., (1983);

Section C: The 30 itemed, Likert type, Assessing Stress among Nursing Students (AEEE) developed by Costa & Polak, (2009) which measures sources of stress. The AEEE has six domains reflecting on sources of stress: Performance of practical activities, Professional communication, Time management, Environment, Professional training, and Theoretical activity (Costa & Polak, 2009); and

Section D: Checklist constructed by the researcher based on the literature. This included items on stress management practices, coping methods, different ways to alleviate stress, maintaining sound psychological health, involvement in hobbies, how the students manage stress, and whether they are addicted to substances, derived from a review of the literature.



3.6.2. Validity and reliability

Validity is described as the precision at which the instruments used in research measure what they are made to measure (Saunders et al., 2016). The Perceived level of Stress Scale (PSS) developed by Cohen et al., (1983), and the instrument to Assess Stress among Nursing Students (AEEE) developed by Costa & Polak, (2009) have previously established validity and reliability. The PSS-10 scale has a Cronbach test of 0.754, which is a good measure of internal consistency (Huang et al., 2020). A systematic review by Lee (2022) indicates that the PSS-10 tends to consist of two factors in adult and university student populations: Perceived Helplessness and Perceived Self-Efficacy. These two factors were construct validated with a correlation result of $r=120$, $\chi^2(34) = 332.224$, $p < .001$; non-normal

fit index (NNFI) = .901, comparative fit index (CFI) = 0.925, root mean square error of approximation (RMSEA) = .075, standardized root mean square residual (SRMR) = .051. (Huang et al., 2020, Liu et al. 2020).

The AEEE has a reported internal consistency of the domains estimated by Cronbach's alpha ranged from .71 to .87 (Costa & Polak, 2009). Palomo-López et al. (2019) also reported a good internal consistency with alpha of 0.886 and intraclass correlation coefficient (ICC) for the six domains of .516 with a 95% confidence interval. Furthermore, a test-retest validity using Wilcoxon paired test showed that there are no systematic differences in the instrument total scores.

Face validity and content validity were used to obtain the validity of the instrument used in this study.

Face validity is substantiating the inclusion of an item in a research tool by associating it with the objectives of the study, thereby giving substantiation for its inclusion (Bryman & Bell, 2013). Content validity is examining items of a research tool to establish the degree of coverage of areas under study (Cooper & Schindler, 2014). As stated by Creswell. (2014), content validity looks at how well the research instrument characterizes all the variable components to measure. The content validity of the study can be seen in Table 3.2.

Table 3.2: Content validity

Objectives	Scale	Items
1) Determine the level of perceived stress in student nurses.	Perceived Stress Scale (PSS): Section B-Perceived level of Stress Scale (PSS)	B Q 1-10
2) Describe the student nurses' sources of stress.	Sources of stress: Section C- Instrument for Assessing Stress among Nursing Students (AEEE)	C Performance of Practical Activities Q1-6 Professional Communication Q1-4 Time Management Q1-4 Environment Q1-4 Professional Education Q1-6 Theoretical Activity Q1-5
3) Identify stress management activities that student nurses use to manage stress.	Stress Management activities:	D Q1-5

Objectives	Scale	Items
	Section D- Checklist on stress management practices	

3.6.3. Reliability

Reliability involves the consistency of a tool to measure what it is intended to measure within a specified period (Polit & Beck, 2017). A pre-test was done to assess the questionnaire in this setting using 10 students (data was excluded). Cronbach's alpha measure was calculated to test instrument reliability in this study (Table 3.3).

Table 3.3: Reliability (Internal consistency)

Scale	Cronbach Alpha
Perceived Stress Scale (PSS): Section B- Questions- Perceived level of Stress Scale (PSS)	.709
Sources of stress: Section C- Questions (Instrument for Assessing Stress among Nursing Students (AEEE))	.828
Stress Management activities: Section D- Questions- Checklist on stress management practices	.713

3.6.4. Data collection process

After approval by the Human and Social Sciences Research Ethics Committee (HSSREC) (Appendix A), permission was sought and obtained from the registrar of the university (Appendix B) and the director of the School of Nursing (Appendix C) to access the students. Access to the research setting was obtained from the Dean of the Faculty of Community and Health Sciences (Appendix D) as strict Covid protocols were followed during the pandemic. The researcher met with the coordinators of each year level of study to obtain the class timetable to determine suitable dates and times for data collection. The researcher attended each lecture and skills laboratory sessions to inform students

about the study and handed out envelopes containing the information sheet (Appendix E), consent form (Appendix F) and the questionnaire (Appendix G) to the respondents. All Covid-19 non-pharmacological preventative measures were adhered to. A box was placed at each lecture room and skills laboratory in which the respondents inserted the completed consent form and questionnaire. This box was checked after each session. Data collection occurred from May to September 2022.

3.7. Data analysis

The researcher categorized the data according to the sections, captured it, coded, and analysed the data using SPSS version 28.

PSS-10: For the stress level measurement, the following PSS-10 procedure by Nordin and Nordin (2013) was followed to score the responses: Responses for the PSS-10 included six negative statements namely: 1, 2, 3,5,9,10 which were coded using the following scale: Never = 0, Almost never = 1, Sometimes = 2, Fairly often = 3, Very often = 4. Responses for the PSS-10 four positive statements 4, 5, 7, 8 were coded on the same scale but reversed to calculate the total scale. All the scores were to be added up for the 10 statements for a total perceived stress score which could be classified into categories (Cohen et al., 1983). The categories are explained in table 3.4.

Table 3.4 PSS scoring key

Levels of stress	Score
Low stress	0 to 13
Moderate stress	14 - 26
High stress	27 - 40

In this study an error was identified during data analysis with two questions observed to accidentally having been omitted, namely: *In the last month, how often have you felt nervous and "stressed"?* and *In the last month, how often have you felt that you were unable to control the important things in*

your life? Due to having only 8 items, to calculate the PSS-total score (once items 4,5,7, 8 were reversed), 8 items were added up for a total score out of 32 which was then converted to a computed score out of 40 (Sum (PSS10 to PSS8)/32*40). Though this is a limitation in the study, it does allow some limited assessment of overall levels of perceived stress related to the 8 items.

Sources of Stress (AEEE): As the scale has 6 domains for sources of stress, four cut off points have been established for each domain for the level of stress caused by the source of stress (Costa & Polak, 2009). Table 3.5 depicts the interpretation of scores for the AEEE (Costa & Polak, 2009).

Table 3.5 AEEE Scoring key

Domain	Levels of stress			
	Low	Average	High	Very high
1) Performance of Practical Activities Stress	0-9	10-12	13-14	15-18
2) Professional Communication Stress	0-5	6	7-8	9-12
3) Time management Stress	0-10	11-12	13-14	15
4) Environmental Stress	0-7	8-10	11	12
5) Professional Education Stress	0-9	10	11-12	13-18
6) Theoretical Activity Stress	0-9	10-11	12-13	14-15

3.8. Ethics

The researcher obtained ethics permission from the Human and Social Sciences Research Ethics Committee at the University of the Western Cape (Appendix A). The registrar of the university (Appendix B) and the director of the School of Nursing (Appendix C) also gave permission to access the student nurses. The researcher observed autonomy, and respondents decided whether to participate without prejudice or penalty. Clarification on the purpose of the study was given to the respondents. Fairness was ensured as all student nurses willing to take part in the study were given a chance to do so. The respondents signed an informed consent form (Appendix F) as an official

method to show voluntary contribution and protection from any harm after the participants have received all the information related to the study.

3.8.1. Principle of respect for persons

It was explained to the respondents that they had the right to self-determination, implying that they were allowed to make their own decisions regarding participation in this study, whether to participate or not, with a right to withdraw from the study at any time, without providing reasons or suffering any penalty. In addition, the researcher explained that they had the right to withhold any information, or request for clarity regarding the study, and that participation in the research study was entirely voluntary (Saunders et al., 2016).

3.8.2. Principles of non-maleficence and beneficence

All research carries risk hence minimal risk during the study was anticipated. Respondents were informed if they experienced any psychological, emotional or spiritual discomfort during or after completing the questionnaire, they would be referred to the Centre for Student Support Service for a pre-arranged counselling session. No respondents reported feeling traumatised during and after the completion of the questionnaires, instead, they expressed appreciation for the study as they felt that they were able to express their stress.

3.8.3. Principle of justice

In this study, the respondents were treated equally, as well as fairly, and no discrimination because of their age, race, gender, level of study or any other variables, was tolerated. The respondents were selected randomly for reasons directly related to the research problem and achieving the aim and objectives of this study. The researcher respected the respondents' right to privacy, by making sure that their personal information is not given to unrelated individuals. Personal information regarding the respondents was only discussed with individuals, who were part of this study, namely the supervisor and the statistician for consultation purposes, after the respondents were informed, and

had agreed to participate regardless. The researcher respected all the agreements made with the respondents. The respondents' names did not appear on the questionnaires, instead, numbers were used to identify the respondents. After the questionnaires were completed, they were placed in an envelope and then a box with a slit. On collection, the researcher placed all the questionnaires and consent forms in one box and locked the box in a lockable cupboard, to which only the researcher has access (Creswell, 2014). Data will be stored in the university repository.

3.9. Summary

In this chapter, the following topics were addressed: research approach, research design, setting, population, inclusion criteria, exclusion criteria, sampling and sample, data collection instrument, validity of the instrument, reliability of the instrument, data collection process, data analysis and ethics.

The next chapter comprises research findings of this study.



CHAPTER 4

RESULTS

4.1 Introduction

The study aim was to investigate the stress levels amongst student nurses at a University in the Western Cape, South Africa. This results chapter is presented based on the three objectives of this study and the demographics of the participants:

- to determine the level of perceived stress in nursing students at a Western Cape University
- to describe the nursing students' sources of stress at a Western Cape University
- identify stress management activities that student nurses use to manage stress.



The first section of the chapter explains how the sample was realised and the demographic variables of the respondents. The second section describes the perceived stress levels. The third section presents the source of stress. The fourth section presents the nursing students stress management activities.

4.2 Sample realisation

The population of the study were all the undergraduate student nurses registered for the 2022 academic year doing Bachelor of Nursing first to the fourth year of study (N=515). Using stratified sampling with year levels as strata, a total of 350 questionnaires were distributed to ensure that

every potential respondent had an equal and fair chance of being included in the study. A total of 238 questionnaires were returned fully answered which represents a 68% response rate. According to Creswell (2014) a response that is above 60% considered a good response rate and response rate above 80% are considered as excellent. For the purposes of this study, the response rate was regarded as sufficient.

4.2.1 Demographics of respondents

In this study, 200 (84.03%) of respondents were female. A total of 62 (26.05%) of the respondents were third year nursing students, 59 (24.79%) first year nursing students, 56 (23.53%) second year nursing students and 37 (15.55%) fourth year nursing students (n= 24 (10.08%) not specified. The average age was 21.81 years (± 3.46 , n=238) (Table 4.1).

Table 4.1: Demographics

Demographics	N=238	Percentage
GENDER		
Female	200	84.03%
Male	38	15.97%
AGE		
< 20 years	103	43.28%
21-25 years	102	42.86%
26-30 years	27	11.34%
> 30 years	5	2.52%
ACADEMIC YEAR		
First Year	59	24.79%
Second Year	56	23.53%
Third Year	62	26.05%
Fourth Year	37	15.55%
Not Specified	24	10.08%

4.3 Perceived stress among nursing students

The respondents were requested to rate their perceived stress level ranging from never to very often, against three (3) positive responses (Table 4.2) and five (5) negative responses (Table 4.3).

Table 4.2: Perceived level of stress – positive responses to stress

Perceived Stress Measure	Never	Almost Never	Sometimes	Fairly Often	Very Often
How often have you felt confident about your ability to handle personal problems?	6(2.5%)	23 (9.7%)	79(33.2%)	80 (33.6%)	50 (21.0%)
How often have you been able to control irritations in your life	6(2.5%)	35 (14.7%)	91 (38.2%)	68 (28.6%)	38(16.0%)
How often have you felt that things were going your way?	10 (4.2%)	61(25.6%)	96 (40.3%)	55 (23.1%)	26 (10.9%)

More than 75% of the respondents rated a positive response to stress in all three statements (Table 4.2). However, similarly, more than 75% of the respondents rated a negative response to stress in all five negative statements (Table 4.3).

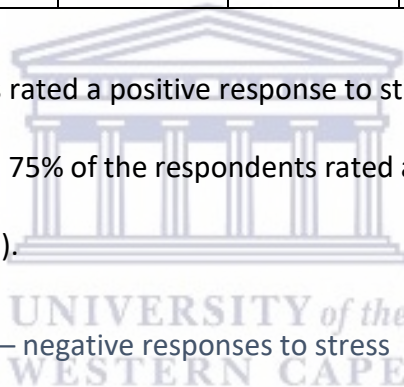


Table 4.3: Perceived level of stress – negative responses to stress

Perceived Stress Measure	Never	Almost Never	Sometimes	Fairly Often	Very Often
How often have you been upset because of something that happened unexpectedly?	11 (4.6%)	19 (8.0%)	87 (36.6%)	57 (23.9%)	64 (26.9%)
How often have you found that you could not cope with all the things that you had to do?	12 (5.0%)	37 (15.5%)	92 (38.7%)	60 (25.2%)	37 (15.5%)
How often have you felt like you were on top of things?	10 (4.2%)	61 (25.6%)	96 (40.3%)	55 (23.1%)	16 (6.7%)
How often have you been angered because of things that were outside of your control?	13(5.5%)	48 (20.2%)	64 (26.9%)	63 (26.5%)	50 (21.0%)

Perceived Stress Measure	Never	Almost Never	Sometimes	Fairly Often	Very Often
How often have you felt difficulties were piling up so high that you could not overcome them?	10 (4.2%)	32 (13.4%)	81 (34.0%)	71 (29.8%)	44 (18.5%)

In analysing the means for each item (Table 4.4), the two highest rated perceived stress items were:

“How often have you been upset because of something that happened unexpectedly?” (m=2.61, ±1.10), *“How often have you found that you could not cope with all the things you had to do?”* (m=2.50, ±1.050). The lowest rated item was: *“How often have you felt (NOT) confident about your ability to handle personal problems?”* (m=1.39, ±1.00).

Table 4.4: Overall mean ratings for perceived stress statements

Perceived stress items	Mean	Standard Deviation
How often have you been upset because of something that happened unexpectedly?	2.61	1.10
How often have you found that you could not cope with all the things you had to do?	2.50	1.05
How often have you felt difficulties were piling up so high that you could not overcome them?	2.45	1.07
How often have you been angered because of things that were outside of your control?	2.37	1.18
How often have you felt like you were (NOT) on top of things?	1.97	0.96
How often have you felt that things were (NOT) going your way?	1.87	1.07
How often have you been able to (NOT) control irritation in your life	1.59	1.01
How often have you felt (NOT) confident about your ability to handle personal problems?	1.39	1.00

4.4 Overall levels of perceived stress and stress categories.

The overall computed stress level was 21.0 out of a possible 40 (± 0.39, median 21.25) [95%CI 20.17-21.72]. In classifying the respondents with high, moderate, and low perceived stress levels, most of the respondents were classified to have moderate stress levels (173, 72.2%), followed by 43 (18.1%) classified and having high perceived stress and 22 (9.2%) classified as having low stress levels (Table 4.5).

Table 4.5: Perceived stress level categories

PSS-10 Stress score range	N=238	%
Scores ranging from 0-13 would be considered low stress	22	9.2%
Scores ranging from 14-26 would be considered moderate stress	173	72.7%
Scores ranging from 27-40 would be considered high perceived stress	43	18.1%
TOTAL	238	100%

4.5 Nursing students' sources of stress

To understand sources of student stress six domains of possible sources of stress were used, namely Performance of Practical Activities; Professional Communication; Time Management; Environmental Stress, Professional Education and Theoretical activity.

Comparison of Domains of Sources of Stress

In comparing the six sources of stress, Professional Educational Stress was rated significantly higher than all other sources, except Professional Communication Stress (Figure 4.1). Theoretical activity was rated as the lowest source of stress (Figure 4.1).

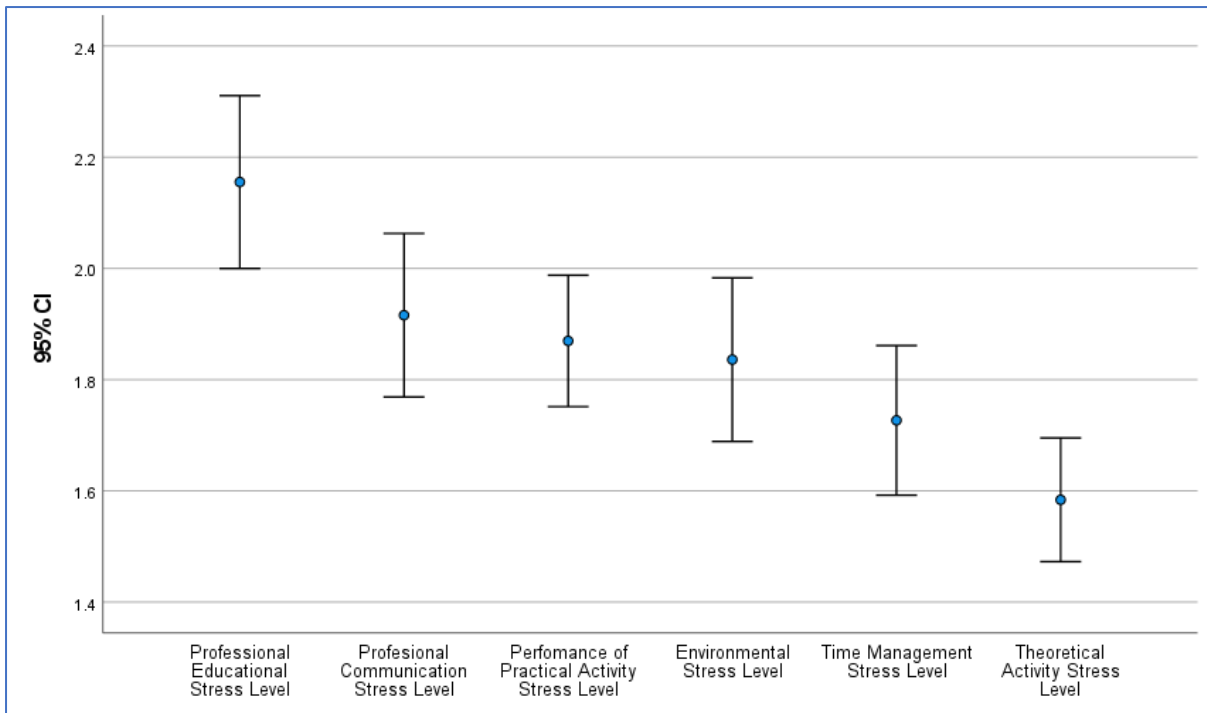


Figure 4.1: Domains of Sources of Stress

The results in the above and table 4.6 show that the highest source of stress was Professional Education ($m=2.16, \pm 1.22$), followed by Professional communication ($m=1.92, \pm 1.15$) and Performance of practical activity ($m=1.87, \pm 0.93$). Theoretical activity was rated the lowest ($m=1.58, \pm 0.87$).

Table 4.6: Mean scores for sources of stress

	Mean	Std. Deviation
Professional Educational Stress	2.16	1.22
Professional Communication	1.92	1.15
Performance of Practical Activities	1.87	0.93
Environment	1.84	1.15
Time Management	1.73	1.05
Theoretical Activity	1.58	0.87

4.5.1 Domain 1: Performance of Practical Activities stress

Overall, Performance of Practical Activities as a source of stress was the third highest rated source of stress (Figure 4.2) with a total score of 9.79/18 (3.39) and a mean score of 1.87/3 (0.93). The highest rated stressful practical activity was *Fear of making mistakes while assisting patients* (2.13, ± 0.88), followed by *Feeling of not having enough knowledge for the practical test* (1.97, ± 0.89). The lowest rated practical activity was *Feeling of not having enough knowledge for the practical test* (1.32, ± 0.83) as depicted in Table 4.7.



Table 4.7: Stress related to Performance of Practical Activities

Performance of practical activities	Mean Score out of 3 (sd)	Did not experience stress in the situation	Stress level is regarded as low	Stress level is regarded as moderate in the presented situation	Stress level is regarded as moderate high in the presented situation
Fear of making mistakes while assisting patients	2.13 (0.88)	10 (4.2%)	48 (20.2%)	82 (34.5%)	98 (41.2%)
Feeling of not having enough knowledge for the practical test	1.97 (0.89)	14 (5.9%)	55(23.1%)	94 (39.5%)	75(31.5%)
New situation one may experience in clinical experience	1.61 (0.89)	29 (12.2%)	72 (30.3%)	100 (42.0%)	37 15.5%)
Performing certain assistance procedure	1.35 (0.77)	30 (12.6%)	109 (45.8%)	85 (35.7%)	14 (5.9%)
Environment at the training clinic unit	1.42 (0.87)	37 (15.5%)	87 (36.6%)	91 (38.2%)	23 (9.7%)

Performing the general assistance procedures	1.32 (0.83)	28 (16.0%)	105 (44.1%)	77 (32.4%)	18 (7.6%)
--	-------------	------------	-------------	------------	-----------

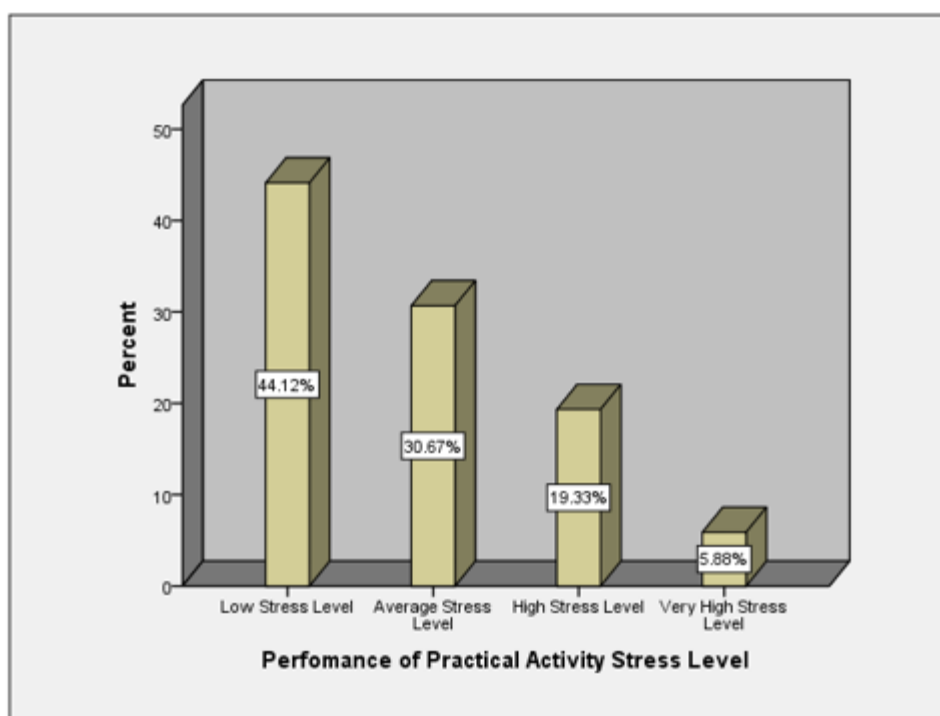


Figure 4.2: Levels of stress related to Performance of Practical Activities

Most of the respondents (105, 44.12%) rated low levels of stress related to practical activities, (73, 30.7%) rated average stress level of stress, 46 (19.33%) high levels of stress, and only 14 (5.88%) rated having very high stress levels due to the performance of practical activities. This means that 55.9% of the respondents rated average to very high stress levels when performing practical activities (Table 4.8).

Table 4.8: Levels of stress related to Performance of Practical Activities

	Mean(sd)	Low stress	Average stress	High stress	Very high stress
Total stress related to practical activity/18	9.79 (3.39)	105(44.1%)	73 (30.7%)	46 (19.3%)	14 (5.9%)

4.5.2 Domain 2: Professional Communication stress

Overall, Professional Communication as a source of stress was the second highest rated source of stress (Figure 4.1) with a total score of 4.95/12 (3.10) and a mean score of 1.92/3 (1.15).

Table 4.9: Stress related to Professional Communication

Professional Communication	Mean (sd)	Did not experience stress in the situation	Stress level is regarded as low	Stress level is regarded as moderate in the presented situation	Stress level is regarded as moderate high in the presented situation
Identification of contradictory attitudes in other professionals	1.37 (0.92)	43 (18.1%)	94 (39.5%)	71 (29.8%)	30 (12.6%)
Communication with professionals from the other sectors at the training unit	1.26 (0.95)	59 (24.8%)	81 (34.0%)	74 (31.1%)	24 (10.1%)
Perception of difficulties regarding the relationship with other nursing professionals	1.18 (0.90)	59 (24.8%)	97 (40.8%)	62 (26.1%)	20 (8.4%)
Communication with the other professionals at the training unit	1.13 (0.97)	74 (31.1%)	81 (34.0%)	60 (25.2%)	23 (9.7%)

The highest rated stressful professional communication activity was *Identification of contradictory attitudes in other professionals* (1.37, ± 0.92), followed by *Communication with professionals from the other sectors at the training unit* (1.26, ± 0.95). The lowest rated stress was for *Communication with the other professionals at the training unit* (1.32, ± 0.83) (Table 4.9).

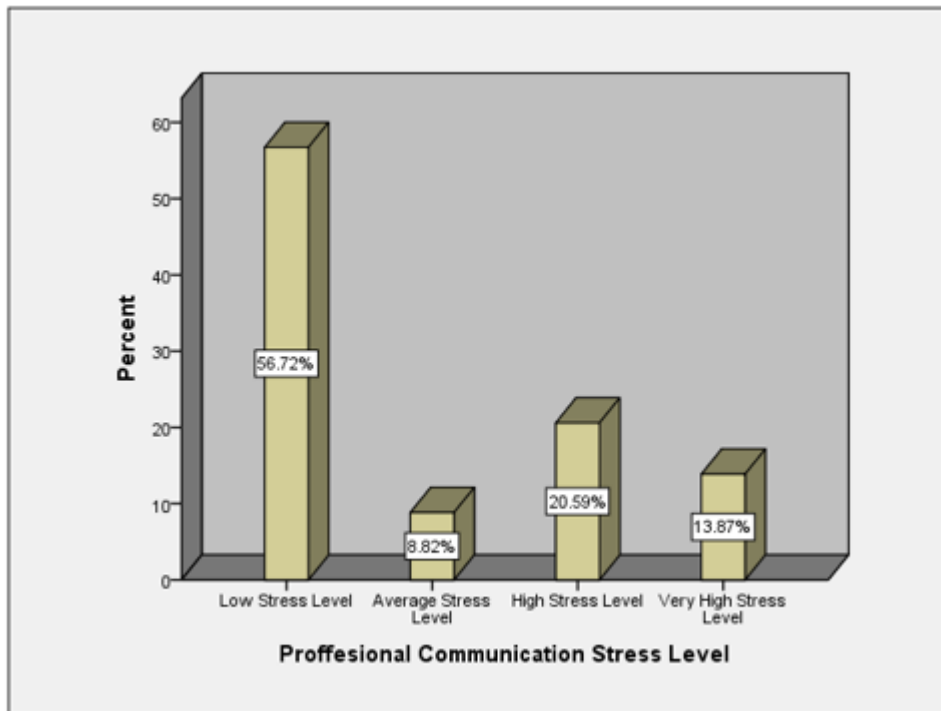


Figure 4.3: Levels of stress related to Professional Communication

Most of the respondents (135, 56.72%) rated having low levels of stress related to Professional Communication, with 25 (8.82%) reporting average stress level of stress, 49 (20.59%) high stress, and 33 (13.87%) reported having very high stress levels due to the Professional Communication. This means that 43.3% experiences average to very high stress level in Professional Communication (Figure 4.3 and Table 4.10).

Table 4.10: Levels of stress related to Professional Communication

	Mean(sd)	Low stress	Average stress	High stress	Very high stress

Total stress related to Professional Communication /12	4.95 (3.11)	135(56.7%)	21 (8.8%)	49 (20.6%)	33 (13.9%)
--	-------------	------------	-----------	------------	------------

4.5.3 Domain 3: Time Management stress

Overall, Time Management as a source of stress was the second lowest rated source of stress (Figure 4.1) with a total score of 9.10/15 (4.10) and a mean score of 1.73/3 (1.05).

Table 4.11: Levels of stress related to Time Management

Time Management	Mean (sd)	Did not experience stress in the situation	Stress level is regarded as low	Stress level is regarded as moderate in the presented situation	Stress level is regarded as moderate high in the presented situation
Lack of the time to rest	2.08 (0.96)	19 (8.0%)	43 (18.1%)	77 (32.4%)	99 (41.6%)
Time demanded by the professor to prepare extra-class activities	1.90 (0.98)	23 (9.7%)	57 (23.9%)	78 (32.8%)	80 (33.6%)
Little time to spend with family members	1.80 (1.11)	45 (18.9%)	39 (16.4%)	72 (30.3%)	82 (34.5%)
Lack of time for leisure	1.74 (0.98)	29 (12.2%)	66 (27.7%)	80 (33.6%)	63 (26.5%)
Reduced social interactions cause feeling of loneliness	1.57 (1.10)	54 (22.7%)	53 (22.3%)	72 (30.3%)	59 (24.8%)

Time Management stress of nursing students is mainly due to a *Lack of the time to rest* (2.08, 0.96), *Time demanded by the professor to prepare extra-class activities* (1.90, 0.98), and *Little time to spend with family members* (1.80, 1.11). The lowest rated item was *Reduced social interactions due to feeling lonely* (1.57, 1.10) as depicted in Table 4.11

Most of the respondents (146, 61.34%) reported having low levels of stress related to time management, 38 (15.97%) average stress, 27 (11.34%) both high stress and very high stress levels

due to time management activities. This means 38.7% experiences average to very high stress levels due to Time Management (Figure 4.4 and Table 4.12).

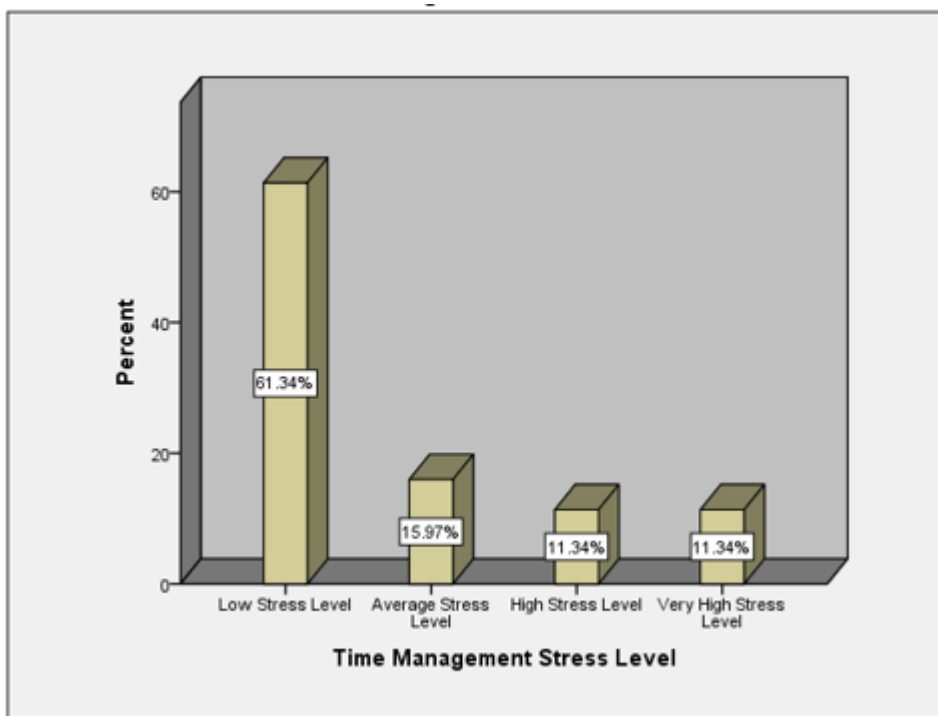


Figure 4.4: Levels of stress related to Time Management

Table 4.12: Levels of stress related to Time Management

	Mean(sd)	Low stress	Average stress	High stress	Very high stress
Total stress related to Time Management /15	9.10 (4.01)	146 (61.43)	38 (15.97%)	27 (11.4%)	27 (11.4%)

4.5.4 Domain 4: Environment stress

Overall, the Environment as a source of stress was the third lowest rated source of stress (Figure 4.1) with a total score of 6.26/12 (4.16) and a mean score of 1.84/3 (1.85).

Table 4.13: Stress related to the Environment

Environment	Mean (sd)	Did not experience stress in the situation	Stress level is regarded as low	Stress level is regarded as moderate in the presented situation	Stress level is regarded as moderate high in the presented situation
Distance between most training places and residence	1.65 (1.17)	58 (24.4%)	44 (18.5%)	60 (25.2%)	76 (31.9%)
Distance between the school and residence	1.59 (1.17)	60 (25.2%)	52 (21.8%)	52 (21.8%)	74 (31.1%)
Public transportation to go to the training place	1.56 (1.24)	73 (30.7%)	39 (16.4%)	45 (18.9%)	81 (34.0%)
Public transportation used to go to school	1.46 (1.22)	77 (32.4%)	44 (18.5%)	47 (19.7%)	70 (29.4%)

The highest rated Environment stress was due to *distance between most training places and residence* (1.65, 1.17). The lowest stress was related to *public transportation to clinical areas* (1.46, 1.22) (Figure 4.5 and Table 4.13)

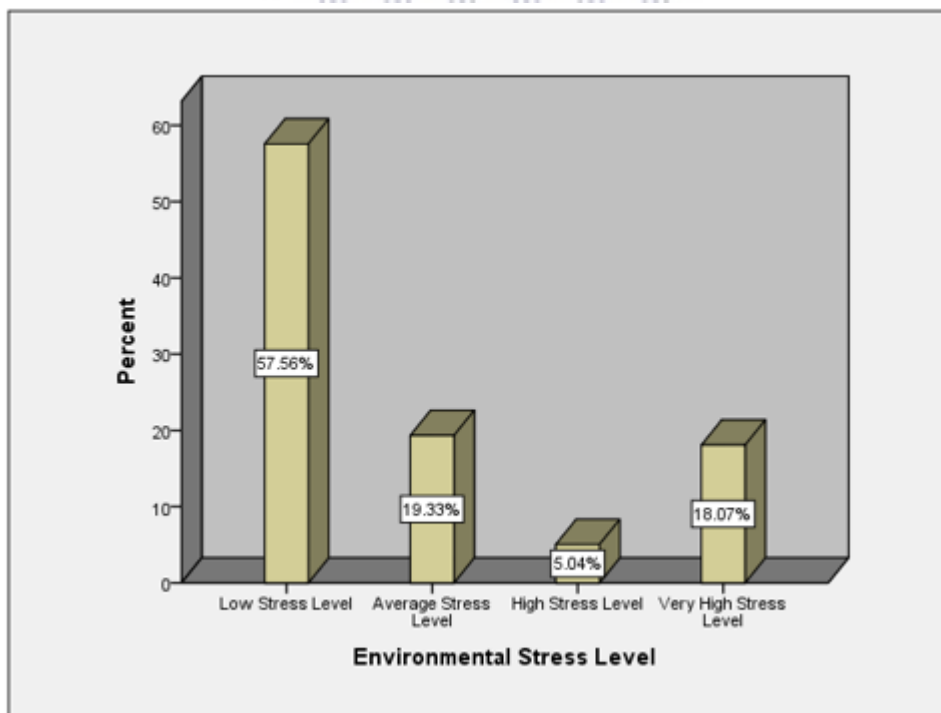


Figure 4.5: Levels of stress related to the Environment

Most of the respondents (137, 57.56%) indicated having low levels of stress related to the Environment, 46 (19.33%) reported an average stress level of stress, 12 (5.04%) a high stress level of stress, and 43 (18.07%) a very high stress levels due to environment. This means 41.4% of the respondents experienced average to very high stress levels due to the environment (Table 4.14).

Table 4.14: Levels of stress related to the Environment

	Mean(sd)	Low stress	Average stress	High stress	Very high stress
Total stress related to Environment /12	6.26 (4.16)	137 (57.6)	46 (19.3%)	12 (5%)	43 (18.1%)

4.5.5 Domain 5: Professional Education stress

Overall, the Professional Education activities was rated as the highest source of stress (Figure 4.1) with a total score of 9.68/18 (3.60) and a mean score of 2.16/3 (1.51). Professional education stress is mainly due to *Concern of professional future* (1.92, 0.83) and the lowest to *Experiencing activities in the training field as a nursing student* (1.45, 0.85) as depicted in Table 4.15.

Table 4.15: Stress related to Professional Education

Professional Education	Mean (sd)	Did not experience stress in the situation	Stress level is regarded as low	Stress level is regarded as moderate in the presented situation	Stress level is regarded as moderate high in the presented situation
Concern of professional future	1.92 (0.93)	26 (10.9%)	84 (35.3%)	101 (42.4%)	27 (11.3%)
Thinking of a situation that may be lived during professional life	1.60 (0.83)	19 (8.0%)	93 (39.1%)	90 (37.8%)	36 (15.1%)
Perceiving the professional responsibility while doing the training program	1.60 (0.84)	27 (11.3%)	107 (45.0%)	74 (31.1%)	30 (12.6%)

Professional Education	Mean (sd)	Did not experience stress in the situation	Stress level is regarded as low	Stress level is regarded as moderate in the presented situation	Stress level is regarded as moderate high in the presented situation
Perceiving the theoretical knowledge acquired during the course	1.57 (0.82)	36 (15.1%)	85 (35.7%)	86 (36.1%)	31 (13.0%)
Similarities between training process and professional life	1.54 (0.83)	21 (8.8%)	86 (36.1%)	99 (41.6%)	32 (13.4%)
Experiencing activities in the training field as a nursing student	1.45 (0.85)	22 (9.2%)	87 (36.6%)	100 (42.0%)	29 (12.2%)

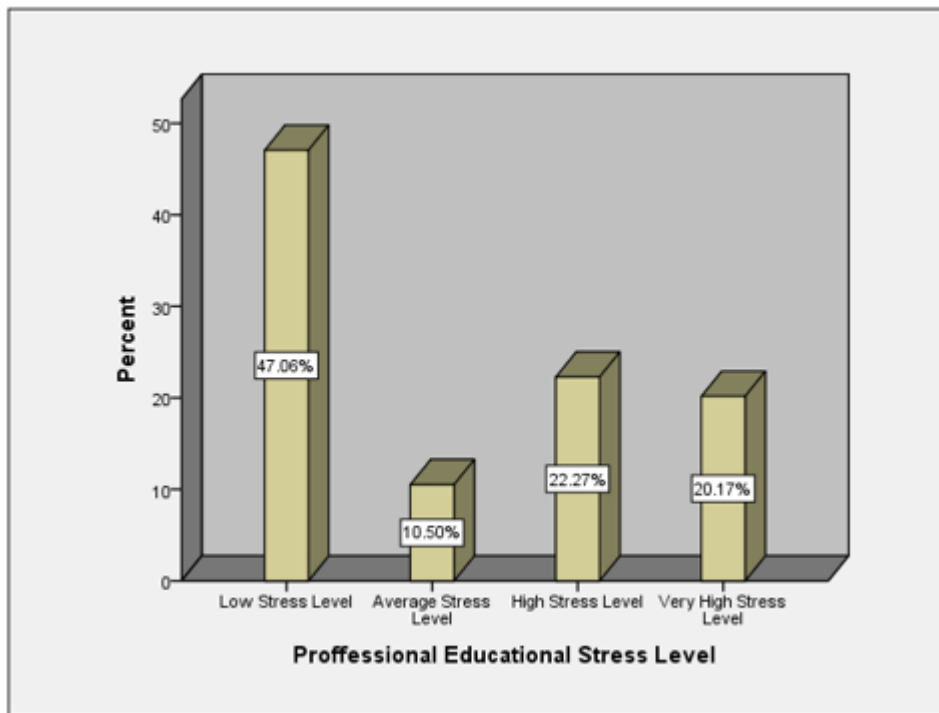


Figure 4.6: Levels of stress related to Professional Education

Nearly half of the respondents (112, 47.06%) indicated experiencing low levels of stress related to Professional Education, 15 (10.50%) reported average level of stress, 53 (22.27%) a high stress level of stress, and 48 (20.17%) a very high stress levels due to professional education activities. This means

52.9% of respondents experienced average to very high stress levels in professional education (Figure 4.6 and Table 4.16).

Table 4.16: Levels of stress related to Professional Education

	Mean(sd)	Low stress	Average stress	High stress	Very high stress
Total stress related to Professional Education /18	9.68 (3.60)	112 (47.1%)	25 (10.5%)	53 (22.3%)	48 (20.2%)

4.5.6 Domain 6: Theoretical Activity

Overall, the Theoretical activities was rated as the lowest source of stress (Figure 4.1) with a total score of 8.11/15 (3.41) and a mean score of 1.58/3 (0.87).

Table 4.17: Stress related to Theoretical Activity

Theoretical Activity	Mean (sd)	Did not experience stress in the situation	Stress level is regarded as low	Stress level is regarded as moderate in the presented situation	Stress level is regarded as moderate high in the presented situation
Feeling insecurities or fear while taking theoretical exams	1.90 (0.93)	32 (13.4%)	76 (31.9%)	84 (35.3%)	46 (19.3%)
Level of difficult to do extra-class assignment	1.61 (0.95)	37 (15.5%)	78 (32.8%)	82 (34.5%)	41 (17.2%)
Understanding the theoretical and practical content taught in class	1.60 (0.93)	30 (12.6%)	78 (32.8%)	87 (36.6%)	43 (18.1%)
Obligation to do extra-classes	1.53 (0.95)	30 (12.6%)	78 (32.8%)	87 (36.6%)	43 (18.1%)
Method format used to assess theoretical content	1.47 (0.90)	18 (7.6%)	61 (25.6%)	86 (36.1%)	73 (30.7%)

The highest rated stress related to Theoretical Activity was for *Feeling insecurities or fear while taking theoretical exams* (1.90, 0.93). The lowest rated stress was for *Method format used to assess theoretical content* (1.47, 0.90) (Figure 4.7 and Table 4.17).

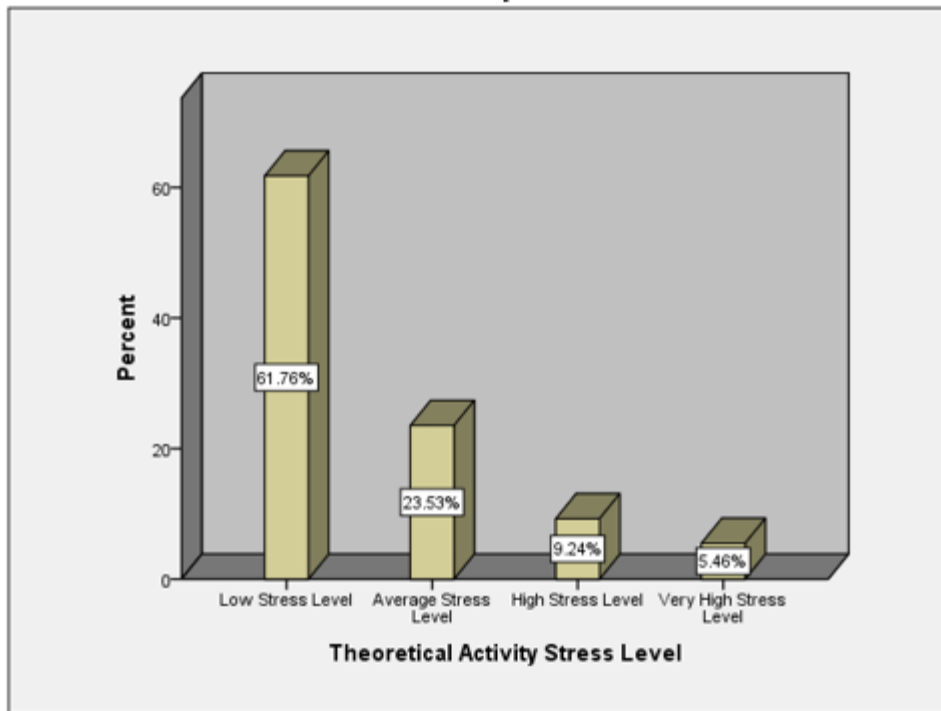


Figure 4.7: Levels of stress related to

Nearly a third of the respondents (147, 61.76%) rated having low levels of stress related to theoretical activities, 56 (23.53%) rated an average stress level of stress, 22(9.24%) a high level of stress, and 13 (5.46%) very high stress levels due to Theoretical activities. This means 38.2% experienced average to very high stress level (Table 4.18).

Table 4.18: Levels of stress related to Theoretical Activity

	Mean(sd)	Low stress	Average stress	High stress	Very high stress
Total stress related to Theoretical activity /15	8.11 (3.41)	147 (61.8%)	56 (23.5%)	22 (9.2%)	13 (5.3%)

4.6 Nursing students' stress management activities

The respondents reported that the most common activity to reduce stress was listening to music (163, 42.7%) (Table 4.19). This was followed by help from peers (73, 19.1%), Internet videos (73, 19.1%) and watching TV (49, 12.8%).

Table 4.19: Activities to reduce stress

	Responses	
	N	Percent
Music	163	42.7%
Help from peers	97	25.4%
Internet Videos	73	19.1%
Watching TV	49	12.8%
Total	382	100.0%

4.7 Effectiveness of stress management activities in managing stress amongst nursing students

Respondents were asked to rate stress management activities which were effective in managing stress. The highest rated activity was 6-8 hours' sleep (149, 33.9%), followed by prayer and meditation (120, 27.3%). Other psychological health activities were rated least effective with only 22 respondents rating it as effective (5%) as depicted in Table 4.20.

Table 4.20: Effective activities to reduce stress

	Responses	
	N	Percent
6-8 hours' sleep	149	33.9%
Prayer and Meditation	120	27.3%
Physical Activity	78	17.7%
Healthy and balanced diet	71	16.1%
Other psychological health	22	5.0%

4.7.1 Hobbies engaged when stressed

Respondents were asked to identify hobbies they may engage in if feeling tense. Of the respondents, 41.6% (98) indicated that they did participate in a hobby. Of the 98, sports and recreation was most common (35, 35.7%) followed by spiritual hobbies (32, 32.7%) (Table 4.21).

Table 4.21: Hobbies to reduce stress

	Responses	
	N	Percent
Sports and Recreation	35	35.7%
Spiritual	32	32.7%
Entertainment	20	20.4%
Not Stated	11	11.2%
Total	98	100.0%

4.7.2 Reaction to stress activities

Respondents were asked to identify how they react to stress. Of the 312 respondents who responded, more than half (174, 55.8) focus on getting things that can be managed (Table 4.22).

Table 4.22: Reaction to stress

	Responses	
	N	Percent
Focus on getting things can be managed	174	55.8%
Ignoring own need	60	19.2%
Facing challenges	48	15.4%
Getting Irritable	30	9.6%
Total	312	100.0%

4.7.3 Substance use as stress management strategy

Lastly, respondents were asked whether they turned to using substances as a stress coping mechanism. Only 37 (16.46%) of the respondents indicated that they use substances, with 28 of the 37 indicating that this is due to stress (75.7%) (Table 4.23).

Table 4.23: Reasons for substance use (n=37)

	Responses	
	N	Percent
Due to stress	28	75.7%
Not stress related	8	21.6%
Reason not stated	1	2.7%
Total	37	100.0%

4.8 Summary

In this chapter, the researcher discussed the perceived level of stress. The sources of stress as the six domains, namely, Performance of Practical Activities; Professional Communication; Time Management; Environmental Stress, Professional Education and Theoretical activity were discussed and compared to each other. Lastly, to determine stress management activities were also discussed.

The study identified key findings that are discussed in the next chapter.



CHAPTER 5

DISCUSSION OF RESULTS

5.1 Introduction

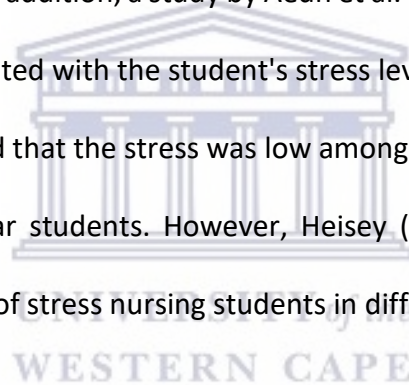
The results are discussed in this chapter based on the literature that was reviewed. The results are discussed using the research objectives introduced in chapter 1 as follows:

- To determine the level of perceived stress in nursing students.
- To describe the nursing students' sources of stress.
- Identify stress management activities that student nurses use to manage stress.

5.2 Level of perceived stress amongst nursing students

This study found that there is a moderate to high prevalence of stress at a university in the Western Cape amongst nursing students. More than 75% of the respondents rated a positive response to stress in all three statements. However, similarly, more than 75% of the respondents rated a negative response to stress in all five negative statements. In consistency to this result, Latif and Nor (2019) assert that many student nurses are stressed during clinical practice. This is because clinical practice is the main component of nursing education besides other challenges related to the nursing education environment. In addition, Deeromram et al. (2010) regard nursing students' academic life as a most stressful period. This may be because stress results from both the clinical field and academic study of the nursing programme. Contrary to this, Ahmed and Mohammed (2019) found that nursing students' level of stress was not very high at a Jordan university with students showing satisfaction with their nursing studies. However, it is important to note Onieva-Zafra et al. (2020) argument that the prevalence of nursing students stress is variable during year of study, and this is due to different nursing programs available globally, use of different stress level scales and

perception differences due to culture. Therefore, in this study, the respondents also expressed the effect of the environment as a source of stress ($m=1.84, \pm 1.15$) which ranked the fourth most important source of stress. The results show that third year nursing students' experience the highest level of stress than students in the other study year levels (29%), followed by first year nursing students (26.1%) and second year nursing students (24.3%). This shows varying stress levels of the nursing students as proceed from one year level of study to the next. A study conducted by Mussi et al. (2019) found that there was a propensity for higher stress levels among students in the last year of study compared to those in the first year in four out of six domains on the AEEE: Performance of Practical Activities ($p=0.00$), Professional Communication ($p=0.00$), Environment ($p=0.00$) and Professional Education ($p=0.00$). In addition, a study by Aedh et al. (2015) reported that the student's academic year was directly associated with the student's stress level ($F = 7.31; df = 2, 482, p < .05$). In contrast, Lamichhane (2019) found that the stress was low among third year students while stress is high among first- and second-year students. However, Heisey (2015) found that there were no significant differences in the level of stress nursing students in different academic years.



The nursing student's age is also a significant factor of stress levels showing that the older the student, the less stress they encounter since students aged from 21-25 years' experience more moderate to high stress level (42%), followed by students aged below 20 years (41.6%) and students aged 26-30 years (10.5%). According to Bam et al. (2014), older nursing students experience less stress than younger nursing students. Lamichhane (2019) also found that more than half of the students have low stress among nurses in age group 17-21 years as compared to 60 percent to nurses in age group 22-25 years. Therefore, levels of stress of nursing students are affected by more than one factor such as age and academic year.

The study found that perceived levels of stress is high when students face unexpected situations, cannot cope with all the things they had to do, have been angered by things that were outside of their control, and often have felt that difficulties were piling up so high that they could not overcome. According to Latif and Nor (2019), nurses training has many challenges that include: how to use to deal with the demands of patients' relatives, how to manage sudden changes in a patient's condition, how to maintain good relationships with clinical staff and instructors, and how to handle high-tech medical equipment. Nursing students were reported as the most stressed students with more psychological and physical symptoms than other faculty students (Ellias et al., 2011). Furthermore, according to Onieva-Zafra et al., (2020), the first experience in clinical practice includes stressors such as fear of making mistakes, having to handle emergency situations, irregularities in clinical practice and visiting specialized units. Nursing students do not have the same responsibility in the provision of individual care of patients in clinical practice as registered nurses. They are however exposed to some of the same stressors. Examples of the same stressors include the relationships with other professionals, the notorious ranking that exists in hospitals, difficult situations regarding the treatment of patients and dealing with family members and the way they experience the death of the patients they care for (Onieva-Zafra et al., 2020). High levels of stress is unhealthy. Low to moderate levels of stress is needed to enhance student motivation that aids in perseverance and achievement of study and career goals (Gibbons, 2015). Conversely, high levels of stress can have a negative influence on students, leading to depression and despair, and therefore affecting students' health and academic level (Riley et al., 2019). Stress is unavoidable and, in most cases, it is difficult to overcome, however, a good coping strategy may help students to improve their academic results (Wang et al., 2019).

5.3 Nursing students' sources of stress

The highest rated stressful professional communication activity was *Identification of contradictory attitudes in other professionals* (1.37, \pm 0.92), followed by *Communication with professionals from the other sectors at the training unit* (1.26, \pm 0.95). The lowest rated stress was for *Communication with the other professionals at training* (1.32, \pm 0.83).

This finding is consistent with Rhead (1995), who avow that stressors stem from both academic activities and clinical placements and have serious health consequences for students.

The following sections discusses the most perceived sources of stress further.

5.3.1 Performance of practical activities as a source of stress

Less than half of the respondents (105, 44.12%) rated low levels of stress related to practical activities, 73 (30.7%) rated average stress level of stress, 46 (19.33%) high levels of stress, and only 14 (5.88%) rated having very high stress levels due to the performance of practical activities. This means that 55.9% ($m= 9.79, \pm 3.39$) of the respondents rated average to very high stress levels when performing practical activities.

These findings are similar to findings of a study conducted by Mabusela and Ramukumba (2021), who found that nurses expressed concern about lack of experience, in implementing technical skills, and the need for more time in the ward. Because of this, nursing students describe implementing new procedures as “stressful”, “scary”, and causing “butterflies and flutters” (Latif & Nor, 2019). Similarly, Latif and Nor (2019) study also found that students frequently identified preparing for clinical assignments as stressful. They do not have the skills and knowledge to perform the clinical procedures in the wards. This causes them to be stressed and has an impact on their self-esteem and usually they are filled with anxiety when performing practical activities.

5.3.2 Stress related to Professional Education

Nearly half of the respondents (112, 47.06%) indicated experiencing low levels of stress related to Professional education, 15 (10.50%) reported average level of stress, 53 (22.27%) a high stress level of stress, and 48 (20.17%) a very high stress levels due to professional education activities. This means 52.9% of respondents experienced average to very high stress levels in professional education. This is because nursing education is regarded as the most stressing and challenging profession globally (Latif & Nor, 2019). According to Tharani et al. (2017), nursing students experience higher levels of stress than other non-nursing university students. As they advance through their programs of study, nursing students are required to meet multiple theoretical and clinical requirements, giving rise to their stress (Rayan, 2019). Although clinical education provides rich opportunities to gain hands-on experience, the clinical component of nursing education has been identified as providing the highest source of stress for nursing students (Yuksel & Bahadir-Yilmaz, 2019). In the classroom, students learn and develop relevant knowledge to provide care for their patients by learning about nursing theory and principles. In the clinical environment, students apply theoretical principles learned in the classroom and 'learn by doing'. In the real work environment, student learn required psychomotor skills and become socialized into the professional nursing role. This is different to other degree programs as nursing students are required to be in touch with the job market that comes with a responsibility of maintaining the wellbeing of patients.

5.3.3 Stress related to Professional Communication

Most of the respondents (135, 56.72%) rated having low levels of stress related to professional communication, with 25 (8.82%) reporting average stress level of stress, 49 (20.59%) high stress, and 33 (13.87%) reported having very high stress levels due to the professional communication activities. This means that 43.3% experiences average to very high stress level in professional communication

activities. According to Deasy et al. (2014), nursing programs are competitive and challenging, with programs of study expanding their content. Current curriculums have increased content, including theoretical content to reflect and meet the needs of the increased professionalisation of nursing, including its scope of practice (Tharani et al., 2017). Similarly, Suarez-Garcia et al. (2018) found that most academic stress of nursing students come from questioning during lecturing, worrying about testing and evaluation, meeting deadlines for assignments and fear of failure. This is because of the intensive theoretical hours needed by nursing students to be adequately equipped to handle nursing responsibilities.

5.3.4 Association between stress level and source of stress

The study found that there is significant correlation between stress level and the source of stress from performance of practical activity ($r=.260$, $p<0.05$), professional communication ($r=0.162$, $p<0.05$), time management ($r=0.232$, $p<0.05$), theoretical activity ($r=0.285$, $p<0.05$). According to Latif and Nor (2019) stress in nursing students is an area of growing concern and it may result in psychological distress, physical complaints, behavioral problems and poor academic performance. In this study, performance of practical activity, professional communication and theoretical activities were found to be the biggest cause of nursing students' stress pushing it to high levels. However, Shipton (2002), who found that the significant amount of time students spent on writing assignments was described as raising the stress level of students. Students in the Shipton study alluded to having been stressed on the care plan which takes a considerable level of time, and they find themselves without time to do it. Contrary to this, Evans and Kelly (2004) argued that increased responsibilities in nursing students do not produce stress. As found in this study, it is the nature of nursing activities i.e., practical activities, professional education and theoretical activities that causes stress levels to rise in nursing students.

5.4 Nursing students stress management activities

The highest rated (149, 33.8%) stress management activity used by the nursing students was 6-8 hours' sleep followed by prayer and meditation (120, 27.3%). According to Bhurtun et al. (2016), nurses facing clinical, academic, and personal stress require stress management activities to cope to avoid deterioration in academic performance, services offered to patients and their own physical and psychological health.

These findings indicate that nursing students in this study use healthy stress management activities. These results concur with the findings by Latif and Nor (2019), who also found that most student nurses use more healthy stress management strategies such as religion, instrumental support than negative or unhealthy ones such as substance abuse. However, according to Alsaqri (2017), unhealthy stress management strategies disturb the students' academic achievements and their future careers. That may attribute to the majority of the respondents in this study who showed their lack of addictions as a stress management activity.

The respondents in the study reliance on peers to cope with stress shows the importance of social support in stress management. This is in line with McCarthy et al. (2018) argument that social support acts as a protective factor for stress, as this strategy can either prevent stress or facilitate a healthy response to the situation. Findings from this study allude to nursing students communicating with peers. Duffy et al. (2015), found nursing students communicating with family, spouse, and instructor to cope with their stress-related challenges. However, McCarthy et al. (2018), found that the most important source of social support are their nursing peers. Peers permit informal conversations that provide reassurance, comfort and a validation of their feelings as they provide an opportunity and safe space to express their frustrations and concerns (Duffy et al., 2015). According to Smith, et al. (2016), discussion with peers can also provide solutions to dealing with a stressful situation, as these

discussions involve efforts to gain information or emotional support to solve a problem. Hence, help from peers is considered a very important stress management activity in this study.

5.5 Use of healthy stress management strategies

This study found that nursing students could sleep or pray or meditate when they find the stress management activities less effective. This result is similar to findings by Latif and Nor (2019), that most student nurses tend to use more healthy stress management strategies such as religion, instrumental support than negative or unhealthy ones such as substance abuse. Most of the nursing students in this study revealed that they do not engage in substance use but focus on hobbies as a healthy stress management strategy when they are stressed. According to Alsaqri (2017), unhealthy stress management strategies disturb the students' academic achievements and their future careers. Such stress management strategies result from high levels of academic stress affect students' judgments, and their regular attendance, and lead to substance addiction, for example smoking cigarettes (Gurková & Zeleníková, 2018). Therefore, in this study, a few nursing students turn to hobbies such as sports and recreation, spiritual activities when stressed out.

5.6 Summary

In this chapter, the researcher discussed the perceived levels of stress amongst nursing students, their sources of stress and stress management activities they use when they are stressed. The following chapter comprises the conclusion, recommendations and limitations of this study.

CHAPTER 6

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

6.1 Introduction

The aim of this study was to investigate student nurses' stress and stress management activities at a selected university in the Western Cape. The objectives were to: (i) determine the level of perceived stress in nursing students; (ii) describe the nursing students' sources of stress; and (iii) identify stress management activities that students use to manage stress.

6.2 Key findings

The study sought to investigate stress in nursing students at a university in the Western Cape, and the key findings were as follows:

6.2.1 Objective 1: Determine the level of perceived stress in student nurses

Stress is prevalent amongst nursing students with most of the respondents agreeing to moderate to high levels of stress. This is common in nursing education environments as stress originates from the clinical practice and the academic demands, however, it differs with stress level scales used, different programs, age, year of study, individuals' culture, and the environment.

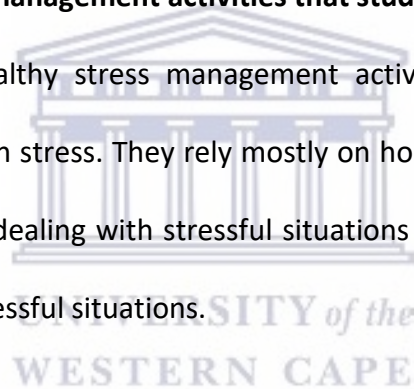
6.2.2 Objective 2: Describe the nursing students' sources of stress

The main sources of stress for nursing students are professional education, professional communication and performance of practical activities. The level of stress has a significant correlation between stress level and the source of stress. Most of the students stress originates from fear of making mistakes while assisting patients, feeling of not having enough knowledge for the practical test, concern of professional future and experiencing activities in the training field as a

nursing student, method format used to assess theoretical content and obligation to do extra-classes. Nursing students start the course without the skills and knowledge to perform the clinical procedures in the wards. This causes them to be stressed and has an impact on their self-esteem and usually they are filled with anxiety when performing practical activities. In the real work environment, nursing students learn knowledge, attitude and skills and become socialised into the professional nursing role. This is different to other degree programs, since nursing students are required to be in touch with the job market that comes with a responsibility for the wellbeing of patients. Intensive theoretical hours are needed by nursing students to be adequately equipped to handle nursing responsibilities.

6.2.3 Objective 3: Identify stress management activities that students use to manage stress

Nursing students mostly use healthy stress management activities such as sleep, prayer and meditation to help them cope with stress. They rely mostly on hobbies and peers as social support that help to provide solutions to dealing with stressful situations and gain information or spiritual support to help deal with their stressful situations.



6.3 Recommendations

Based on the findings of this study, the following recommendations are made to:

6.3.1 Nursing Education

Regular training on self-help coping strategies

- It is important for universities and colleges to train nursing students on self-help mechanisms that assist them to effectively deal with stress during training. These strategies must include healthy stress management strategies.
- Establish student peer monitoring programs that ensure students have a support mechanism during stressful moments in students' life. Access to technology could

assist in achieving this by developing a mobile application where students connect with each other.

- **Awareness campaigns on unhealthy strategies**

- Colleges and universities must conduct awareness campaigns on the negative effects of unhealthy coping strategies such as drug addiction, alcohol use and reinforce the students understanding of various healthy coping mechanisms at their disposal.

- **Curriculum development**

- The universities should consider academic workload through a blended learning approach and explore the possibility of some modules being fully online (self-paced) so that students could work through the content at their own pace.
- Create interprofessional education opportunities through case-based learning across the faculty or other institutions and possibly inclusive of
- medical schools utilising available online platforms to prepare students for clinical practice.

6.3.2 Research

- Future studies can be done on multiple case studies and be longitudinal in nature to capture the relationships more accurately and be able to generalise the results.
- Develop stress management toolkits that could be available in a mobile application for students to access at the point of need.
- The researcher recommends further studies be conducted in universities, public nursing colleges, private hospital groups and independent private nursing education institutions to determine student nurses' stress and stress management activities in South Africa so that there could be broader interventions to ensure student nurses' health and wellbeing.

6.3.3 Clinical practice

The possibility of developing a clinical education model that would articulate the responsibilities of each nurse category in practice in training students during clinical placement.

Development of a professional socialisation framework that guide and support students as they progress with their studies.

6.4 Limitations

The researcher acknowledges that the study has several limitations as articulated below:

Sample bias: This study can be conducted on a large sample of other nursing education institutions in both private and public. The questionnaire was administered during the Alert level 1 Covid-19 lockdown restrictions with difficulty in recruiting respondents; physical contact was limited as the students were attending lectures online.

Paucity of literature: There is a dearth of studies on stress in nursing students in South Africa, even though stress and coping mechanisms have been extensively studied among nursing researchers elsewhere.

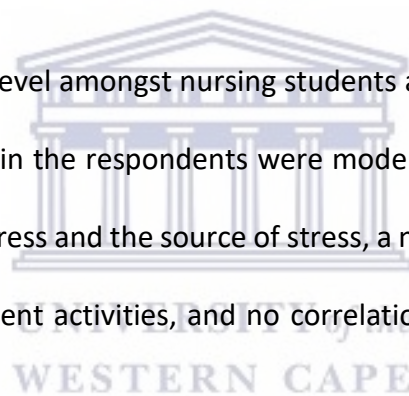
Instrument: In this study an error was identified during data analysis with two questions observed to accidentally having been omitted, namely: *In the last month, how often have you felt nervous and "stressed"?* and *In the last month, how often have you felt that you were unable to control the important things in your life?* Due to having only 8 items, to calculate the PSS-total score (once items 4,5,7, 8 were reversed), 8 items were added up for a total score out of 32 which was then converted to a score out of 40 ($\text{Sum (PSS1 to PSS8)}/32*40$). Though this is a limitation in the study, it does allow some limited assessment of overall levels of perceived stress related to the 8 items.

Lastly, the nature of this study was a mini-thesis which only used a quantitative method that involved the use of a self-administered questionnaire to solicit responses based on specific set of options. Possibly, a qualitative study is recommended for future research. The researcher anticipates that these initial findings in South Africa will provide a basis for future researchers.

6.5 Conclusion

Nursing education is stressful in South African universities emanating from academic and clinical areas. Stress needs to be managed and self-help stress management techniques are amongst effective stress management activities that can lower stress levels of nursing students.

This study investigated the stress level amongst nursing students at university in the Western Cape. The findings are that stress levels in the respondents were moderate to high. There is a significant correlation between the level of stress and the source of stress, a negative correlation between level of stress and the stress management activities, and no correlation between sources of stress and stress management activities.



REFERENCES

- Abdullah, I.A., Nahid, K.E. & Itedal, A.M. (2015). Factors Associated with Stress among Students. *Journal of Nursing and Health Science*, 4(6), 33-38.
- Aedh, A.I., Elfaki, N. K., & Mohamed, I.A. (2015). Factors associated with stress among nursing students (Najran University-Saudi Arabia). *IOSR J Nurs Heal Sci*, 4(6), 33-38.
- Ahmed, W.A.M. & Mohammed, B.M.A. (2019). Nursing students' stress and coping strategies during clinical training in KSA. *Journal of Taibah University Medical Science*, 14(2), 116-122.
- Al-Gamal, E., Alhosain, A., & Alsunaye, K. (2018). Stress and coping strategies among Saudi nursing students during clinical education. *Perspectives in psychiatric care*, 54(2), 198-205.
- Alsaleem, M.A., Alsaleem, S.A., Shehri, S.A. & Awadalla, N.J. (2021). Prevalence and correlates of university students' perceived stress in southwestern Saudi Arabia. *Medicine*, 100(38), 1-19.
- Alsaqri, S.H. (2017). Stressors and Coping Strategies of the Saudi Nursing Students in the Clinical Training: A Cross-Sectional Study. *Education Research International*, 21(2), 1-14.
- Alshowkan, A. (2022). Clinical Stress among Bachelor Nursing Students: A Qualitative Inquiry. *Open Journal of Nursing*, 12(1), 305-315.
- Amanvermez, Y., Rahmadiana, M., Karyotaki, E., de Wit, L., Ebert, D.D., Kessler, R.C., & Cuijpers, P. (2020). Stress management interventions for college students: A systematic review and meta-analysis. *Clinical Psychology: Science and Practice*, 12(1), 1-15.
- Ashktorab, T., Hasanvand, S., Seyedfatemi, N., Salmani, N., & Hosseini, S.V. (2017). Factors Affecting the Belongingness Sense of Undergraduate Nursing Students towards Clinical Setting: A Qualitative Study. *Journal of Caring Sciences*, 6(3), 221-235.

- Bam, V. B., Oppong, G. A., & Ibitoye, M. B. (2014). Stress and coping mechanisms of nursing students during clinical practice in Ghana. *Journal of Science and Technology (Ghana)*, 34(2), 50-59.
- Baqtayan S. (2011). Stress and social support. *Indian journal of psychological medicine*, 31(1), 29-34.
- Bhavani, G.G. (2018). Study On Prevalence of Stress among Undergraduate Medical Students. *Journal of Dental and Medical Science*, 17(7), 26-28.
- Bhui, K., Dinos, S., Galant-Miecznikowska, M., de Jongh, B., & Stansfeld, S. (2016). Perceptions of work stress causes and effective interventions in employees working in public, private and non-governmental organisations: a qualitative study. *Psychology Bulletin Journal*, 40(6), 318-325.
- Bhurtun, H. D., Azimirad, M., Saaranen, T., & Turunen, H. (2019). Stress and coping among nursing students during clinical training: An integrative review. *Journal of Nursing Education*, 58(5), 266-272.
- Biggs, A., Brough, P., & Drummond, S. (2017). Lazarus and Folkman's psychological stress and coping theory. *The handbook of stress and health: A guide to research and practice*, 349-364.
- Brink, H., Van der Walt, C. & Van Rensburg, G. (2018). *Fundamentals of research methodology for health care professionals*. Cape Town: Juta and Company.
- Bryman, A. & Bell, E. (2013). *Business Research Methods*. Oxford: Oxford University Press.
- Ching, S.S.Y., Cheung, K., Hegney, D., & Rees, C.S. (2020). Stressors and coping of nursing students in clinical placement: A qualitative study contextualising their resilience and burnout. *Nurse Education in Practice*, 1-13.

- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). Perceived stress scale (PSS). *Journal Health Social Behaviour, 24*(1), 285-294.
- Cooper, D.R. & Schindler, P.S. (2014). *Business Research Methods*. New Delhi: Tata McGraw-Hill.
- Costa, A.L.S. & Polak, C. (2009). Construction and validation of an instrument for the assessment of stress among nursing students. *Revista da Escola de Enfermagem da USP, 43*(1), 1017-1026.
- Creswell, J.W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. California: Sage Publications.
- Deasy, C., Coughlan, B., Pironom, J., Jourdan, D. & Mannix-McNamara, P. (2014). Psychological distress and coping amongst higher education students: A Mixed method inquiry. *PLoS ONE, 1-23*.
- Deeromram, C., Suwannimitr, A., & Jundeekrayom, S. (2010). Mental health promotion among nursing students. *Journal of Social Sciences, 6*(2), 133-140.
- Demir, S., Demir, S.G., Bulut, H., & Hisar, F. (2014). Effect of mentoring program on ways of coping with stress and locus of control for nursing students. *Asian Nursing research, 8*(4), 254-260.
- Devkota, R. & Shrestha, S. (2018). Stress among bachelor level nursing students. *Nepal Medical College, 20*(1-3), 33-40.
- Devonport, T. (2011). *A Brief Review of Commonly Used Theories and the Importance Of Applying Theory In Practice*. Wolverhampton: Nova Science Publisher.
- Dube, M.B., & Mlotshwa, P.R. (2018). Factors influencing enrolled nursing students' academic performance at a selected private nursing education institution in KwaZulu-Natal. *Curationis, 41*(1), 1-7.

- Duffy E, Avalos G, Dowling M. (2015). Secondary traumatic stress among emergency nurses: a cross-sectional study. *Intern in Emergence Nurses*, 23(1), 53-58.
- Durgun-Ozan, Y., Duman, M., Cicek, O., & Baksi, A. (2020). The effects of clinical education programs based on Watson's theory of human caring on coping and anxiety levels of nursing students: A randomized control trial. *Perspective in Psychiatric Care*, 56(3), 621-628.
- Ekpenyong, C.E., Daniel, N.E. & Aribio, E.O. (2013). Associations between academic stressors, reaction to stress, coping strategies and musculoskeletal disorders among college students. *Ethiopian Journal of Health Sciences*, 23(2), 98-112.
- Elias, H., Ping, W.S., & Abdullah, M.C. (2011). Stress and academic achievement among undergraduate students in Universiti Putra Malaysia. *Procedia-Social and Behavioral Sciences*, 29, 646-655.
- Pinar, S. E., Yildirim, G., & Sayin, N. (2018). Investigating the psychological resilience, self-confidence and problem-solving skills of midwife candidates. *Nurse education today*, 64, 144-149.
- Evans, W., & Kelly, B. (2004). Pre-registration diploma student nurse stress and coping measures. *Nurse education today*, 24(6), 473-482.
- Fink, G. (2016). *Stress: Concepts, Cognition, Emotion, and Behavior*. Melbourne: The Mental Health Research Institute of Victoria.
- Fink, G. (2017). Stress, Concepts, Definition and History. *Neuroscience and Biobehavioral Psychology*, 1(1), 1-9.
- Gibbons, C. (2015). Stress, eustress and the national student survey. *Psychology Teaching Review*, 21(2), 86-92.

- Grobecker, P.A. (2016). A sense of belonging and perceived stress among baccalaureate nursing students in clinical placements. *Nurse Education Today*, 36(1), 1-18.
- Gurková, E., & Zeleníková, R. (2018). Nursing students perceived stress, coping strategies, health and supervisory approaches in clinical practice: A Slovak and Czech perspective. *Nurse Education Today*, 65(1), 4-10.
- Hägg-Martinell, A., Hult, H., Henriksson, P., & Kiessling, A. (2020). Nursing Students Learn to Handle Stress and to Prioritize in a Complex Context During Workplace Learning in Acute Internal Medicine Care - An Ethnographic Study. *Advances in medical education and practise*, 11(1), 21-30.
- Heisey, Alissy, "Do Stress Levels Differ Between First Semester Nursing Student Early in The Semester Vs. The End of The Semester?" (2015). *Undergraduate Honors Theses*. Paper 436. <https://dc.etsu.edu/honors/436>
- Huang, F., Wang, H., Wang, Z., Zhang, J., Du, W., Su, C., ... & Zhang, B. (2020). Psychometric properties of the perceived stress scale in a community sample of Chinese. *BMC psychiatry*, 20(1), 1-7.
- Jamshindi, N., Molazem, Z., Sharif, F., Torazibadeh, C. & Kaylani, M.N. (2016). Clinical Learning Environment: A Qualitative Study. *The Scientific World Journal*, 20(1), 1-15.
- Jimenez, C., Navia-Osorio, P.M. & Diaz, C.V. (2010). Stress and health in novice and experienced nursing students. *Advanced Nursing*, 66(1), 442-455.
- Joshi, A., Kiran, R., Singla, H. K., & Sah, A. N. (2018). Stress management through regulation of blood pressure among college students. *Work*, 54(3), 745-762.
- Kabir, S.M. (2017). *Stress and Time Management*. Banglabazar: Abosar.

- Kalyani, M. N., Jamshidi, N., Molazem, Z., Torabizadeh, C., & Sharif, F. (2019). How do nursing students experience the clinical learning environment and respond to their experiences? A qualitative study. *BMJ open*, 9(7), e028052.
- Kinchen, E. V. & Loerzel, V. (2019). Nursing Students' Attitudes and Use of Holistic Therapies for Stress Relief. *Journal of Holistic Nursing*, 37(1), 6-17.
- Kwaa, C.Y. & Esselfie, G. (2017). Stress and Coping Strategies Among Distance Education Students at University of Cape Coast, Ghana. *Turkish Online Journal of Distance Education*, 18(3), 1-15.
- Labrague, L.J., McEnroe-Petitte, D.M., Gloe, D., Thomas, L. & Papathanasiou, I.V. (2017). A literature review on stress and coping strategies in nursing students. *Journal of mental health*, 26(1), 471-480.
- Lamichhane, K. (2019). Factors associated with stress among nursing students in pokhara. *Int J New Technol Res*, 5, 52-55.
- Langtree, E. M., Razak, A., & Haffejee, F. (2018). Factors causing stress among first-year students attending a nursing college in KwaZulu-Natal, South Africa. *African Journal of Health Professions Education*, 10(2), 90-102.
- Latif, R.A. & Nor, M.Z.M. (2019). Stressors and Coping Strategies during clinical practice among diploma nursing students. *Malaysia Journal of Medical Science*, 26(2), 88-98.
- Lavina, R., Deepa, P., Abin, K., Shwetha, R. & Priya, M.N. (2021). Anxiety Among the Nursing Students During the Initial Clinical Experience. *International Journal of Current Research and Review*, 12(13), 161-175.
- Lavoie, P. & Clarke, S.P. (2017). Simulation in Nursing Education. *Nursing Management*, 47(7), 18-20.

- Lavoie-Tremblay, M., Sanzone, L., Aube, T. & Paquet, M. (2021). Sources of Stress and Coping Strategies Among Undergraduate Nursing Students Across all Years. *Canadian Journal of Nursing, 0(0)*, 1-11.
- Leary M.R. (2015). Emotional responses to interpersonal rejection. *Dialogues in clinical neuroscience, 17(4)*, 435-441.
- Lee, C. (2022). Stress and Coping Among Nursing Students During the Introductory Internships Training. *International Journal of Women's Health Care, 7(2)*, 88-95.
- Liang, H. F., Wu, K. M., Hung, C. C., Wang, Y. H., & Peng, N. H. (2019). Resilience enhancement among student nurses during clinical practices: a participatory action research study. *Nurse education today, 75*, 22-27.
- Luisa, P.A., Bitencourt L., Fróes, A.C.F., Cazumbá, M.L.B., Campos, R., Gustavo B., de Brito, S.B. & Simões, S.A.C. (2020). Emotional, Behavioral, and Psychological Impact of the COVID-19 Pandemic. *Frontiers in Psychology, 11(1)*, 1-19.
- Mabusela, P.D. & Ramukumba, T.S. (2021). The experience of professional nurses working with newly qualified nurses placed for community service in public health facilities in the City of Tshwane, South Africa. *Curationis, 44(1)*, 1-21.
- Macedo de Freitas, A. C., de Miranda Malheiros, R. M., da Silva Lourenço, B., Fernandes Pinto, F., Cruz de Souza, C., & Lopes Almeida, A. C. (2018). Intervening factors in the quality of life of nursing student. *Journal of Nursing UFPE/Revista de Enfermagem UFPE, 12(9)*.
- Mahani, S., & Panchal, P. (2019). Evaluation of Knowledge, Attitude, and Practice Regarding Stress Management among Undergraduate Medical Students at Tertiary Care Teaching Hospital. *Journal of Clinical and Diagnostic Research, 3(8)*, 5-9.

- Martino, F. De. (2019). Instruments for the evaluation of stress in nursing students. *Journal of Nursing UFPE on Line - Qualis B2*, 13(3), 829-845.
- McCarthy, B., Trace, A., OO'Donovan, M., Brady-Nevin, C., Murphy, M., OO'Shea, M., & OO'Regan, P. (2018). Nursing and midwifery students stress and cope during their undergraduate education programs: An integrative review. *Nurse Education Today*, 61(1), 197-209.
- McGowan, B. (2006). Who do they think they are? Undergraduate perceptions of the definition of supernumerary status and how it works in practice. *Journal of clinical Nursing*, 15(9), 1099-1105.
- Mlambo, M., Silén, C. & McGrath, C. (2021). Lifelong learning and nurses' continuing professional development, a meta synthesis of the literature. *BMC Nursing*, 20(1), 62-81.
- Mussi, F. C., Pires, C. G. D. S., Carneiro, L. S., Costa, A. L. S., Ribeiro, F. M. S., & Santos, A. F. D. (2019). Comparison of stress in freshman and senior nursing students. *Revista da Escola de Enfermagem da USP*, 53.
- Najafi Kalyani, M., Jamshidi, N., Molazem, Z., Torabizadeh, C., & Sharif, F. (2019). How do nursing students experience the clinical learning environment and respond to their experiences? A qualitative study. *BMJ Open*, 9(7), 1-15.
- Nebhinami, M., Kumar, A., Parihar, A. & Rani, R. (2020). Stress and Coping Strategies among Undergraduate Nursing Students: A Descriptive Assessment from Western Rajasthan. *Indian Journal of Community Medicine*, 45(2), 172-175.
- Nordin, M., & Nordin, S. (2013). Psychometric evaluation and normative data of the Swedish version of the 10-item perceived stress scale. *Scandinavian journal of psychology*, 54(6), 502-507.

- O'Flynn-Magee, K., Hall, W., Segaric, C. & Peart, J. (2021). The impact of Covid-19 on clinical practice hours in pre-licensure registered nurse programs. *Teaching and Learning in Nursing, 16*(1), 3-12.
- Onieva-Zafra, M.D., Fernández-Muñoz, J.J., Fernández-Martínez, E., García-Sánchez, F.J., Abreu-Sánchez, A. & Parra-Fernández, M.L. (2020). Anxiety, perceived stress, and coping strategies in nursing students: a cross sectional, correlational, descriptive study. *BMC Medical Education, 20*(1), 1-9.
- Palomo-López, P., Losa-Iglesias, M. E., Becerro-de-Bengoa-Vallejo, R., López-López, D., Rodríguez-Sanz, D., Ántolín-Gil, M. S., ... & Calvo-Lobo, C. (2020). Reliability and repeatability of the assessment of stress in nursing students instrument in podiatry students: a transcultural adaptation. *Applied Sciences, 10*(11), 3815.
- Pascoe, M.C., Hetrick, S.E. & Parker, A.G. (2019). The impact of stress on students in secondary school and higher education. *International Journal of Adolescence and Youth, 25*(1), 1-18.
- Payne, L.K., & Mullen, P. (2014). Outcome measures for traditional, accelerated nursing graduates: An integrative literature review. *Nursing Education Perspectives, 10*(5), 1-12.
- Perng, S.J., Sung, H. C., Chen, C. J., Lee, T. Y., & Koo, M. (2020). Low interest in clinical practicum placement is associated with increased stress in nursing students in Taiwan: A cross-sectional survey study. *Nurse Education Today, 10*(4), 241-249.
- Polit, D.F. & Beck, C.T. (2017). *Nursing research: Generating and assessing evidence for nursing practice*. Philadelphia, Penn: Lippincott Williams & Wilkins.
- Priesack, A. & Alcock, J. (2015). Well-being and self-efficacy in a sample of undergraduate nurse students: a small survey study. *Nurse Education Today, 35*(1), 16-20.

- Rafati, F., Nouhi, E., Sabzevari, S., & Dehghan-Nayeri, N. (2018). Coping strategies of nursing students for dealing with stress in the clinical setting: A qualitative study. *Electronic Physician, 9*(12), 6120-6128.
- Rayan, A. (2019). Mindfulness, self-efficacy, and stress among final year students. *Journal of Psychosocial Nursing and Mental Health Services, 57*(4), 49-55.
- Republic of South Africa. (2006). Nursing Act no 33 of 2005. *Government Gazette, 491*(28883): Pretoria.
- Rhead, M. M. (1995). Stress among student nurses: is it practical or academic? *Journal of clinical nursing, 4*(6), 369-376.
- Ribeiro, F., Mussi, F.C., Pires, C., Silva, R., Macedo, T., & Santos, C. (2020). Stress level among undergraduate nursing students related to the training phase and sociodemographic factors. *Revista latino-americana de enfermagem, 28*(1), 1-13.
- Riley, J.M., Collins, D. & Collins, J. (2019). Nursing students' commitment and the mediating effect of stress. *Nurse Education Today, 76*(1), 172-177.
- Rossouw, F. M. (2018). *Stressors and coping strategies among Baccaulaureus technologiae undergraduate nursing students at a Western Cape higher education institution* (Doctoral dissertation, Stellenbosch: Stellenbosch University).
- Sajid, A., Ahmad, T. & Khalid, T. (2015). Stress in medical undergraduates; its association with academic performance. *Bangladesh Journal of Medical Science, 14*(2), 135-141.
- Saunders, M., Lewis, P. & Thornhill, A. (2016). *Research Methods for Business Students*. Harlow: Pearson.

- Shaban, I. A., Khater, W. A., & Akhu-Zaheya, L. M. (2012). Undergraduate nursing students' stress sources and coping behaviours during their initial period of clinical training: A Jordanian perspective. *Nurse education in practice, 12*(4), 204-209.
- Shahsavarani, A.M., Abadi, E.A.M. & Kalkhoran, M.H. (2015). Stress: Facts and Theories through Literature Review. *International Journal of Medical Reviews, 2*(2), 230-241.
- Shdaifat, E., Jamama, A., & Al-Amer, M. (2018). Stress and coping strategies among nursing students. *Global Journal Medical Science, 10*(5), 33-42.
- Shiferaw, H., Anand, S. & Namera, G.N. (2015). Stress and Coping Strategies Among Generic B.Sc. Nursing Students of Jimma University, South West Ethiopia. *International Journal of Recent Advances in Multidisciplinary Research, 2*(7), 511-517.
- Shipton, S. P. (2002). The process of seeking stress-care: Coping as experienced by senior baccalaureate nursing students in response to appraised clinical stress. *Journal of Nursing Education, 41*(6), 243-256.
- Smith, M.M., Saklofske, D., Keefer, K.V. & Tremblay, P.F. (2016). Coping Strategies and Psychological Outcomes: The Moderating Effects of Personal Resiliency. *The Journal of Psychology Interdisciplinary and Applied, 150*(3), 318-331.
- Suarez-Garcia, J. M., Maestro-Gonzalez, A., Zuazua-Rico, D., Sánchez-Zaballos, M., & Mosteiro-Diaz, M. P. (2018). Stressors for Spanish nursing students in clinical practice. *Nurse Education Today, 64*(1), 16-20.
- Tharani, A., Husain, Y., & Warwick, I. (2017). Learning environment and emotional wellbeing. *Nurse Education Today, 59*(1), 82-87.

- Thulung, B., Thapa, S. & Singh, J.P. (2019). Stress, Stressors and Coping Strategies among Nursing Students, Chitwan, Nepal. *World Journal of Pharmaceutical and Medical Research*, 12(1), 83-89.
- van Graan, A.C., Williams, M.S. & Koen, M.P. (2016). Professional nurses' understanding of clinical judgement: A contextual inquiry. *Health SA*, 1-14.
- Wallace, L., Bourke, M.P., Tormoehlen, L.J., & Poe-Greskamp, M.V. (2015). Perceptions of clinical stress in baccalaureate nursing students. *International Journal of Nursing Education*, 9(2), 1-11.
- Wang W, Xu H, Wang B, Zhu E. (2019). The mediating effects of learning motivation on the association between perceived stress and positive deactivating academic emotions in nursing students undergoing skills training. *Korean Academic Nursing*, 49(1), 495-504.
- Yasmin, H., Khalil, S., & Mazhar, R. (2020). Covid 19: Stress Management among Students and its Impact on their effective learning. *International Technology and Education Journal*, 4(2), 65-74.
- Yikealo, D., Yemane, B. & Karvinen, I. (2018). The Level of Academic and Environmental Stress among College Students: A Case in the College of Education. *Open Journal of Social Sciences*, 6(11), 1-17.
- Yildiz, U., Ozbas, A., Cavdar, I., Yildizeli, S. & Onler, E. (2015). Assessment of nursing students' stress levels and coping strategies in operating room practice. *Nurse Education Practice*, 15(3), 192-195.
- Yuksel, A., & Bahadir-Yilmaz, E. (2019). Relationship between depression, anxiety, cognitive distortions, and psychological wellbeing. *Perspectives in Psychiatric Care*, 55(4), 690-696.



26 January 2022

Mr A Mafilika
School of Nursing
Faculty of Community and Health Sciences

HSSREC Reference Number: HS21/10/53

Project Title: Stress among Student Nurses at a University in the Western Cape, South Africa.

Approval Period: 25 January 2022 – 25 January 2025

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology, and amendments to the ethics of the above mentioned research project.

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

Please remember to submit a progress report by 30 November each year for the duration of the project.

For permission to conduct research using student and/or staff data or to distribute research surveys/questionnaires please apply via:

<https://sites.google.com/uwc.ac.za/permissionresearch/home>

The permission letter must then be submitted to HSSREC for record keeping purposes.

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

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



UNIVERSITY OF THE WESTERN CAPE PERMISSION TO CONDUCT RESEARCH

DEAR **Andile Mike Mafilika**

This serves as acknowledgement that you have obtained and presented the necessary ethical clearance and your institutional permission required to proceed with the project referenced below:

RESEARCH TOPIC

Stress among Student Nurses at a University in the Western Cape, South Africa

Name of researcher : Andile Mike Mafilika
Permission valid till : 25 January 2025
Institution : University of the Western Cape
Ethics reference : HS21/10/53
Permission reference : UWCRP352446

You are required to engage this office (researchperm@uwc.ac.za) in advance if there is a need to continue with research outside of the stipulated period. The manner in which you conduct your research must be guided by the conditions set out in the annexed agreement: Conditions to guide research conducted at the University of the Western Cape.

Please be at liberty to contact this office should you require any assistance to conduct your research or require access to either staff or student contact information.

Regards
Dr Ahmed Shaikjee
Deputy Registrar Academic Administration

Approval status: APPROVED 26 January 2022

To verify or confirm the authenticity of this document please contact the University at researchperm@uwc.ac.za.



14 April 2022

Dear Mr Mafilika

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT THE SCHOOL OF NURSING, UNIVERSITY of the WESTERN CAPE

Name of Researcher: Andile Mike Mafilika

Research Topic: *Stress among Student Nurses at a University in the Western Cape, South Africa*

Institution: UWC

Health Research Ethics Committee - Ethics Clearance Reference No.: HS21/10/53

UWC Permission Reference Code: UWCRP352446

Target population: All the undergraduate student nurses registered for the 2022 academic year, Bachelor of Nursing (R.425), SASI programme codes 8310 and 8311

Ethics Validity Period: 25 January 2022 – 25 January 2025

As per your request and evidence provided, we acknowledge that you have obtained the necessary permission and ethics clearance. Permission is therefore granted for you to conduct your research as outlined in your proposal.

Please note that while permission is granted to conduct your research (i.e. interviews and surveys) staff and students at the School of Nursing are not compelled to participate and may decline to participate or withdraw should they wish to.

Should you wish to make use of or reference the School's name, spaces, identity, etc. in any publication/s, you must first furnish the School with a copy of the proposed publication/s so that the School can verify and grant permission for such publication/s to be made publicly available.

As per your letter of permission to conduct research at the UWC from Dr Ahmed Shaikjee, Deputy Registrar, assistance to access student contact information, must be done through the office of the Deputy Registrar.

We wish you success with your research.

Yours sincerely



Prof Penelope Martin

Director: School of Nursing

Faculty of Community and Health Sciences

UNIVERSITY of the WESTERN CAPE

T: 021 959 9345

E: pmartin@uwc.ac.za

14 April 2022

Dear Prof Rhoda

Re: Access to the CHS Bellville Campus: Data collection, Monday 25 to Friday 29 April 2022

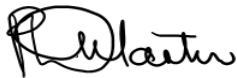
I hereby would like to request access to CHS Bellville Campus for the following Masters student for the above period for data collection:

Title	Surname	First name	ID	email	Cell number
Mr	Mafilika	Andile	8506085314084	Andile.Mafilika@lifehealthcare.co.za	0829665899

Please note that Ms Mafilika is fully vaccinated.

All Covid-19 protocols will be observed on campus. Ms Goba will arrange the interview schedules with the students.

Yours sincerely



Prof Penelope Martin
Director: School of Nursing
Faculty of Community and Health Sciences
UNIVERSITY of the WESTERN CAPE
T: 021 959 9345
E: pmartin@uwc.ac.za

UNIVERSITY of the
WESTERN CAPE



Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959 3024 Fax:9592271
E-mail: 2324073@myuwc.ac.za

INFORMATION SHEET

Project Title: Stress among Student Nurses at a University in the Western Cape, South Africa

What is this study about?

This is a research project being conducted by Mr A. Mafilika at the University of the Western Cape. We are inviting you to participate in this research project because you are a registered undergraduate nursing student. The purpose of this research project is to investigate stress among nursing students at your university. Given the prevalence of psychological distress among student nurses, the findings of this study may assist to equip student nurses with the knowledge necessary to recognise stress, ability to determine when to seek assistance, and capacity to manage stress effectively to promote well-being and prevent distress.

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

You will be asked to complete a self-administered questionnaire. The questionnaire is divided into **Section A:** consists of demographic information regarding age, year of study, and gender. **Section B:** Perceived levels of stress with 12 items using a Likert scale. **Section C:** Sources of stress using the Instrument for Assessing Stress among Nursing Students. This section has 30 questions focusing on performance of practical activities, professional communication, time management, environment, professional training, and theoretical activity. **Section D:** is a checklist on stress management practices, coping methods, different ways to alleviate stress, maintaining sound psychological health, involvement in hobbies, how the students manage stress, and whether they are addicted derived from a review of the literature which you would need to tick which of these you use.

It should take no longer than 20 minutes to complete the questionnaire.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, (1) your name will not be included on the surveys and other collected data; (2) a code will be placed on the survey and other collected data; (3) through the use of an identification key, the researcher will be able to link your survey to your identity; and (4) only the researcher will have access to the identification key.

To ensure your confidentiality, all completed questionnaires will be stored in a locked cupboard. Your anonymized data on SPSS will only be accessible to the statistician, supervisor, and researcher for analysis.

If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

There are nominal risks that may include physical, mental, emotional, divine, legal, or social harm. If you experience any psychological, emotional, spiritual, social, or harm as you become aware of the stress expressed, you will be referred to counselling to a pre-arranged counsellor who has been specifically appointed for this study.

What are the benefits of this research?

This research is not designed to help you personally, but the results may help the investigator learn more about stress amongst nursing students. We hope that, in the future, other people might benefit from this study through improved understanding of the knowledge necessary to recognise stress, ability to determine when to seek assistance, and capacity to manage stress effectively to promote well-being and prevent distress. It could also yield to a stress management programme for nursing students.

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

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

What if I have questions?

This research is being conducted by Mr A Mafilika, School of at the University of the Western Cape. If you have any questions about the research study itself, please contact Mr A Mafilika at: Faculty of Community and Health Sciences, University of the Western Cape, 14 Blankenberg Street, Bellville, 7535, email address 2324073@myuwc.ac.za

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

Prof P.D. Martin
Head of Department: School of Nursing
University of the Western Cape
Private Bag X17
Bellville 7535
pmartin@uwc.ac.za

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

This research has been approved by the University of the Biomedical Research Ethics Committee.

Biomedical Research Ethics Committee
University of the Western Cape
Private Bag X17
Bellville
7535
Tel: 021 959 4111
e-mail: research-ethics@uwc.ac.za

Centre for Student Support Services
University of the Western Cape
Private Bag X17
Bellville
7535
24/7 Free call Counselling Helpline: 0800 222 333
Bookings for counselling sessions: csss@uwc.ac.za





UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959 3024, Fax:

E-mail: amafilika12gmail.com

CONSENT FORM

Title of Research Project: ***Stress among Student Nurses at a University in the Western Cape, South Africa***

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

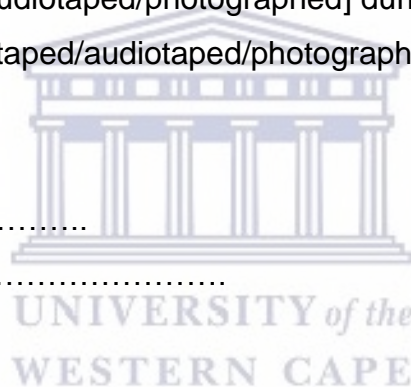
___ I agree to be [videotaped/audiotaped/photographed] during my participation in this study.

___ I do not agree to be [videotaped/audiotaped/photographed] during my participation in this study.

Participant's name.....

Participant's signature.....

Date.....



Humanities and Social Sciences Research Ethics Committee

University of the Western Cape

Private Bag X17

Bellville

7535

Tel: 021 959 4111

e-mail: research-ethics@uwc.ac.za

Appendix G

The Questionnaire Stress and stress management

Section A: Demographics (Please complete section by writing information on the space provide)

Age (years)	
Gender (Male or female)	
Programme	
Year of study	

Section B: Perceived stress – Perceived Stress Scale (PSS)

Please answer this section by ticking on the most suitable box. You will be asked how often you felt or thought a certain way.

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

No.	Items	0	1	2	3	4
1.	In the last month, how often have you been upset because of something that happened unexpectedly?					
2.	In the last month, how often have you felt confident about your ability to handle your personal problems?					
3.	In the last month, how often have you found you could not cope with all the things you had to do?					
4.	In the last month, how often have you been able to control irritation in your life?					
5.	In the last month, how often have you felt that things were going your way?					
6.	In the last month, how often have you found that you could not cope with all the things that you had to do?					
7.	In the last month, how often have you been able to control irritations in your life?					
8.	In the last month, how often have you felt that you were on top of things?					
9.	In the last month, how often have you been angered because of things that were outside of your control?					
10.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?					

Section C: Sources of stress - Instrument for Assessing Stress among Nursing Students (AEEE)

Please answer this section by ticking the applicable box. You will be asked how often you experience stress under these circumstances.

0 = Did not experience stress in the situation;

1 = Stress level is regarded as low in the presented situation;

2 = Stress level is regarded as moderate in the presented situation;

3 = Stress level is regarded as moderate high in the presented situation

No.	Items	0	1	2	3
Domain: Performance of Practical Activities					
1.	New situations one may experience in clinical practice				
2.	Environment at the training clinical unit				
3.	Fear of making mistakes while assisting patients				
4.	Feeling of not having enough knowledge for the practical test				
5.	Performing the general assistance procedures				
6.	Performing certain assistance procedures				
Domain: Professional Communication					
1.	Communication with the other professionals at the training unit				
2.	Communication with professionals from other sectors at the training unit				
3.	Perception of difficulties regarding the relationship with other nursing professionals				
4.	Identification of contradictory attitudes in other professionals				
Domain: Time Management					
1.	Little time to spend with family members				
2.	Reduced social interactions cause feelings of loneliness				
3.	Lack of time for leisure				
4.	Lack of time to rest				
5.	Time demanded by the professor to prepare extra-class activities				
Domain: Environment					
1.	Distance between the school and residence				
2.	Public transportation used to go to the training place				
3.	Public transportation used to go to school				
4.	Distance between most training places and residences				
Domain: Professional Education					
1.	Concerns about professional future				
2.	Similarities between situations lived during the training process and those that may be lived during professional life				
3.	Thinking of situations that may be lived during professional life				
4.	Perceiving the professional responsibility while doing the training program				
5.	Experiencing activities in the training field as a nursing student				
6.	Perceiving the theoretical knowledge acquired during the course				
Domain: Theoretical Activity					
1.	Method format used to assess theoretical content				
2.	Feeling insecurity or fear while taking theoretical exams				
3.	Level of difficulty to do extra-class assignments				
4.	Obligation to do extra-class assignments				
5.	Understanding the theoretical and practical content taught in the classroom				

Section D: Stress management activities

Which of the following do you use to alleviate stress? *(Please tick where applicable – more than one can be selected)*

1. Which of the following strategies do you think can reduce stress?
 - Watching television
 - Listening to music
 - Seeking help from peers
 - Internet videos

2. Which of the following method is most ideal way of maintaining sound psychological health?
 - Indulging in physical activity
 - Prayers and meditation
 - 6-8 hours' sleep
 - Healthy and balanced dietOthers: _____

3. Do you take part in any of the hobbies when tensed?
 - Yes
 - NoIf yes, state them: _____

4. How do you react to stress?
 - Facing challenges by putting stress in a better perspective
 - Try to focus on things that can be managed and accepting those that cannot be controlled
 - Getting irritable and taking out on nearby people
 - Ignoring your own needs and working faster and harder

5. Have you been or currently are victim of addiction? (Such as smoking/tobacco/drinking)
 - Yes
 - NoIf yes, is stress the major cause? _____