

The influence of selected demographic variables on the
experience of stress among first year students at a selected
university in the Western Cape

By

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Thesis presented in partial fulfilment of the requirements for the
degree of Master of Commerce in Industrial Psychology at the
University of the Western Cape

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March 2016

DECLARATION

I declare that “The influence of selected demographic variables on the experience of stress among first year students at a selected university in the Western Cape” is my own work, that it has not been submitted before for any degree or assessment in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

Full Name: Ebrahim Adams

Date: March 2016

Signed.....



ABSTRACT

The acceptance into university is particularly more challenging than gaining admission into primary and secondary institutions of learning. This is due to *inter alia* the limited amount of enrolment positions available at universities in relation to the number of students who complete their studies at secondary institutions. First year students experience a great change in curriculum from secondary school to tertiary education. These students experience a great deal of stress in terms of dealing with their new academic demands and their personal physiological developmental milestones. It is at this time that the students are fighting for the autonomy from the control of their parents or guardians as they strive to be independent. It is also at this stage that most students drop-out of tertiary education institutions. It is therefore important to understand how the demographic factors assist these students in dealing with stress.

The purpose of the study was to answer the questionnaire, "Are there gender, age, home language, faculty and socioeconomic differences in the experience of stress among students at a selected tertiary institution in the Western Cape province of South Africa?"

The research study was conducted using students from a university in the Western Cape Province of South Africa. The total number of respondents who completed the questionnaire was 306 ($n=306$). The respondents comprised of only first year university students from various faculties. The participants in the study completed the SASS which comprised of 50 questions. In addition, they also completed a biographical section which comprised of the respondents' age, gender, home language, socio-economic status and faculty.

An item analysis was conducted on the all of the SASS subscales (Affective, Behavioural, Cognitive and Physiological) using SPSS version 23. Subsequently, an Exploratory Factor Analysis (EFA) was performed on the subscales to ensure the uni-dimensionality of the subscales. A Pearson correlational test was performed to determine the relationship between age and stress since age was defined as a continuous variable. An independent samples t-test was conducted to determine if differences in mean scores

exist between gender and stress. An Analysis of variance (ANOVA) was performed to assess stress differences in terms of home language, socio-economic status and faculty. The analyses were performed using SPSS version 23.

Based on the result we were able to conclude that there is no statistical significance between gender and stress; stress and language; socio-economic status and stress; as well as between faculty and stress. Furthermore, it was found that there is no significant relationship between age and stress. The practical implications of the study and limitations are discussed as well as the direction for future studies.



ACKNOWLEDGMENT

In the culmination of this research study I cannot give sufficient recognition, appreciation and gratitude to all parties involved for their zeal, eagerness and efforts. The commitment to finalise the thesis has been due to the help and support of many motivators met on the road to completion. Their assistance in this regard has been invaluable and I will be eternally grateful to them.

To begin with, I am grateful to Allah (The Creator) for giving me the opportunity to complete my Masters degree, in the light of the significant number of people who lack access to all basic forms of education. There are two types of people in the world, teachers and students. May Allah give me the opportunity to give back to those who are in dire need of *inter alia* basic education and or to facilitate their higher education.

The analysis of the collected questionnaires was conducted via the SPSS package, Dr. Bright Mahembe was instrumental in guiding me and conveying information in the use of this statistical analytical programme. It was a pleasure to work with Dr. Mahembe both learning from him and working alongside him as a colleague. Your ability to supervise my thesis was par excellence. Thank you Dr. Mahembe.

To my belated uncle whose name I share, whom I never met, who was also an alma mater of UWC. He always strove to help the less fortunate, and was taken away at the prime of his life, at the age of 23. Our prayers are always with him, and may Allah grant him a high place in paradise. He is a shining example of the fragility of life and how our capacity to help others should exceed our capacity to help ourselves.

To all of my siblings, Aziza, Sakinah, Sabirah, Siddiqah, Achmad-Ali and Ammaarah, I thank you for always being there for me through all of the endeavours I have undertaken. Your assistance through all of the trying times in my life shall not be forgotten. Thank you

to my English teacher Toyer Nakidien, who was available to discuss the rules of grammar. However, I accept responsibility for any grammatical errors in this thesis.

To my beloved and dearest parents, Ali and Wasiela Adams, without your support, love, encouragement and motivation, I would not have completed any of my studies. The depth of which your affection, devotion and loyalty seems to have no end. Your commitment to the continuous uplifting and unification of the community, having close ties with your family and an unquenchable thirst for knowledge has been etched in my memory. If Allah wills, may I be able to make you as proud of me, as you continue to make me proud to call you my parents.

To my wife, Yusra, with whom I have started sharing a life-long journey, you have always supported and encouraged me to increase my knowledge base as you understand and value the importance of learning as an educator yourself. I thank you for being so considerate and patient while I completed my studies.

Many thanks to the Department of Industrial Psychology for encouraging me from an undergraduate level to further my studies. Thanks to the academic staff for the collegial working environment and those staff members with whom I have worked with before, for showing leadership and communication skills and advising on all matters unbeknown to me. Thanks to the administrative staff whose assistance continues to be instrumental in streamlining departmental processes.

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

Stress is an inevitable and unavoidable part of our day-to-day lives. It permeates all spheres of human existence including our academic, social and work lives (Rojas & Kleiner, 2001). According to Van Zyl (1993), 34, 7 % of Coloureds, 38, 1 % of Whites and Asians and 35 % of Black South Africans suffer from high stress. In the education sector, stress has been documented as also affecting most tertiary students. The source of the word stress has been drawn from the Latin *stringere*, which means to draw tight and was used commonly in the 17th century to explain hardships or affliction (Cartwright & Cooper, 1997).

Rojas and Kleiner (2001) asserts that stress consistently plays a fundamental role in our day to day existence. In contemporary times we find that stress can affect both our capacity to perform at a work level and similarly how we function on a social/ emotional level with our friends and families. Ultimately, stress can determine the extent to which we enjoy our lives. At this point it is important to note that not all stress is damaging and negative whether in relation to our productivity and performance at work or our everyday interactions with family or friends. Rather, a certain level of stress is vital and necessary for the production of eagerness, resourcefulness and efficiency. Nonetheless, exceeding disproportionate levels of stress might have disparaging results, more specifically if the circumstances do not call for this raised level of energy (Rojas & Kleiner, 2001).

It is easy to see how stress can cause some instability or disturbances in our psychological and physiological wellbeing, as a result of hostile environmental effects. However, elusive stress has been shown to be associated with warning signs and indications of serious health concerns such as high tensioned relationships, excessive loss or increase in weight, constant exhaustion, increased and heightened levels of

anger, lack of sleep, regular incidence of headaches and decreased productivity (Hanes, 2002; Werner, Bagraim, Cunningham, Potgieter & Viedge, 2007).

According to Lee and Kleiner (2005, p.179), some of the negative effects of stress include but are not limited to the following:

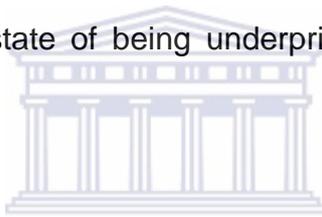
Psychological disorders. Stress in this particular category if not contained can arouse moods of anger, panic, struggle, burden, hurt, despondency, insufficiency, blameworthiness, lonesomeness, or perplexity. The indicators of psychological illnesses include: different levels of anxiety, depressive states, employee discontent, poorly adjusted behavioural patterns, drug addictions, inattentiveness and alcohol dependencies.

Physical disorders. Stress in this particular category if not contained can encourage a range of physiological illnesses: heart ailments, raising of blood pressure levels, strokes, severe headaches, cancer, indigestion, asthma, diabetes, recurrent sickness, sleeplessness, burnout and exhaustion.

In the organisational context, stress alone has been documented to account for approximately 80 % of lost work days (Finkelstein, 2003). This is inclusive of additional sick days, heightened levels of turnover as well as clashes and rivalry among lower level employees and those in supervisory positions. Clearly, the negative effects of stress are detrimental to both the employee and organisational wellbeing.

Although several studies on stress have been conducted in both private and public sector organisations (Finkelstein, 2003; Varvogli & Darviri, 2011), more studies need to be conducted on how students in tertiary institutions manage stress in South Africa. Studying at tertiary institutions is usually accompanied by varying amounts of stress, which is an ordinary occurrence for students (Busari, & Uwakwe, 2001). Since the stress problem is especially evident in the transition between high school (Secondary schooling) and the onset of tertiary education, the question arises whether enough is being done via the schools, government or even universities themselves to initiate and prepare students during secondary school learning for the harsh reality and adjustments they are going to face in tertiary institutions (Hall, Chipperfield, Perry,

Ruthig, & Goetz, 2006; Moffat, McConnachie, Ross, & Morrisson, 2004). First-year university students are especially challenged with various obstacles, several of which are demonstrated to be more than what they can overcome. Consequently, any prospects of these students furthering their education are dramatically lessened and, furthermore, their prospects of graduating or even proceeding with their second year of university studies are dramatically reduced as is evident by the reflection of the high failure and dropout rates in South Africa (Pillay & Ngcobo, 2010). In the findings by Pillay and Ngcobo (2010), 92.5% of the students cited fear of failure as one of the stressors, 86% indicated financial problems and 77.4% identified problems with housing and accommodation as they had relocated to reside closer to the university. It is evident that there are various stressors distressing university students. Pillay and Ngcobo (2010) further assert that the resultant failure rates must surely be linked to these stressors, some of which have their roots in previous historical societal inequalities and the general state of being underprivileged and coming from rural areas.



The levels of stress among university students is a topic of much distress particularly insofar as to the degree to which they influence students' levels of performance and their general academic operation. In South Africa there is also much concern about the soaring failure and dropout rates among first-year students (Letseka & Breier, 2008). In 2005, the Directorate on Higher Education Planning stated that from the 120 000 Tertiary students that registered in 2000, collectively 50% dropped out in 1st, 2nd and 3rd year, 36 000 in 1st year (30%) and 24 000 in 2nd and 3rd year (50%). Graduation of the remaining 60 000 students were as low as 22% (less than half), which completed in the stipulated three year period for a general Bachelor degree. The DoE at the time stated that the soaring rate at which students were dropping out amounted to R4.5 billion in relation to grants and sponsorships to the tertiary institutions and were devoid of any return on investment. As it is manifested that nearly 50% of 1st to 3rd students dropout, this alludes to a more serious question, in the Higher Education sectors ability to develop a more effective output rate. The state of affairs is evident in the recent nationwide spate of student protests in which students demanded that "fees must fall." The demonstrations which characterised the last half of the year of 2015 are a clear

manifestation of one of the possible reasons why students dropout and lack of finance being a stressor for students in this regard.

Of late various universities have also embarked on part-time classes for people who are working. Concerns are also raised with regards to how the students manage to balance their work and their studies. As stressors stem from various aspects of life including developmental and social changes, financial and accommodation problems, work demands, and the specific demands of academic life, often the demands of work, study and personal needs collide, tipping the balance and resulting in disequilibrium and excessive stress (Busari, 2000; Michie, Glachan, & Bray, 2001). Poor coping strategies and personality types may result in additional stress in certain individuals, leading to negative patterns of behaviour and decreased academic performance.

Although a lot of studies on stress have been conducted to date, several of these studies have been mainly involving employees (Finkelstein, 2003; Varvogli & Darviri, 2011). Paucity exists regarding how students at tertiary institutions deal with stress. The overarching aim of the present study is to answer the question, “Are there gender, age, home language, faculty and socioeconomic differences in the experience of stress among students at a selected tertiary institution in the Western Cape province of South Africa?”

1.2 Objectives

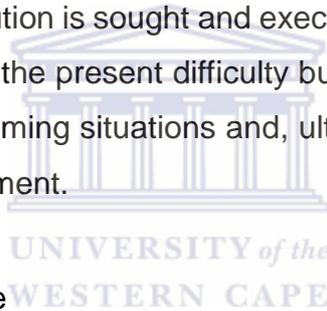
The specific objectives of the present study are therefore:

1. To ascertain if gender differences on stress perceptions exist among the identified student sample
2. To ascertain if age differences on stress perceptions exist
3. To ascertain if language differences affect perceived stress levels
4. To ascertain if socio economic status affects students perceived level of stress
5. To ascertain if the faculty of students affects the students perceived level of stress

1.3 Significance of the study

The study was also undertaken to gain practical and theoretical insights into first-year university students and their student life in an academic environment. The study seeks to highlight how gender, age and study level differences relate to stress in order for universities to offer student support on how to cope with stress and manage stress in their first-year of university and, as a result are able to deal with stress more efficiently and effectively. This information is especially important for student support centres which are the specific units that usually offer some psychosocial support on how to deal with various problems.

There are several benefits to containment and managing stress. Cooper and Marshall (1975) suggest that proper management of stress helps in dealing with the demanding circumstance whereby a resolution is sought and executed which is beneficial not only due to the fact that it removes the present difficulty but it also prepares the individual for any possible similar forthcoming situations and, ultimately can progress to rightly-earned feelings of accomplishment.



1.4 Dissertation chapter outline

Chapter One

The introductory chapter puts forth the argument that has been unravelled which further elucidates and drives the research which essentially ended up in the research generating question and the purpose of the research study. The literature study will shed light on the relevant research problem.

Chapter Two

The basis of chapter two is to formulate a comprehensive analytical position through the various literature on stress, including stress models, as an answer to which the research initiating question is borne out of. This chapter is investigative and expository and, furthermore encompasses a theoretical inquiry for a response to the research triggering problem and through that development a resolution to the objective is

reached. Various classical and contemporary models of stress are discussed and condensed and their findings presented.

Chapter Three

The strategy used to answer the research questions of the study is outlined in chapter three. The procedure or methodology encapsulates the various topics: Research hypothesis, research design, sampling strategy, data collection technique, measuring instruments, imputation of missing values and the statistical analyses. These items or issues are discussed in chapter three.

Chapter Four

A presentation of the results of the analyses of the data is done in chapter four. The findings relating to how missing data was addressed, the reliability of the instruments used in the study as well as the tests for uni-dimensionality are presented. The tests for significant differences in means in terms of the variables under investigation are also presented in the chapter.

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Chapter Five

An analysis and presentation of the results and findings made in chapter four are presented in chapter five. Chapter five follows a path whereby the argument is made with regards to the inferences of the findings for confirmatory progressive practice, conceptual frameworks and forthcoming/forthcoming research. In other words, the results are discussed in relation to previous study findings.

1.5 Summary

This chapter introduces the research problem and the background of the problem leading to the research questions, objectives and the significance of the study. The discussion in the present chapter started by highlighting the role that stress plays in

our everyday life, and if not contained, the resultant disorders both psychological as well as physical.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In order for any student to attain success in their studies, it is usually accompanied with varying amounts of stress, this however is an ordinary course of events for the students (Busari & Uwakwe, 2001). In the transition between high school (secondary schooling) and the onset of tertiary education, the question arises whether enough is being done by the schools, government or even universities themselves to initiate and prepare students from secondary learning institutions for the harsh reality and adjustments they face in tertiary institutions. For the student, this transition from high school to tertiary institutions usually results in heightened levels of stress and anxiety. It is to be expected that greater intensities of stress are experienced by students in tertiary institutions (Hall, Chipperfield, Perry, Ruthig, & Goetz, 2006; Moffat, McConnachie, Ross, & Morrisson, 2004). First-year university students are challenged with various obstacles, several of these challenges of which are identified to be more than what they can overcome. Consequently, any prospects of these students furthering their education are significantly lessened and furthermore their prospects of graduating or even continuing to their second year of university is dramatically reduced as is evident by the reflection of the high failure and dropout rates in South Africa (Pillay & Ngcobo, 2010).

The fear of failing, financial instability and housing struggles feature very strongly with regards to the sources of stress of university students, with family members passing away being general themes that inter alia occur (Pillay & Ngcobo, 2010).

The levels of stress among University students is a topic of much distress particularly insofar as stress influence students' levels of performance and their general academic operations. In South Africa there is also much concern about the soaring failure and dropout rates among first-year students (Letseka & Breier, 2008).

These stressors stem from various aspects of life, including developmental and social changes, financial and accommodation problems, work demands, and the specific demands of academic life. Often, the demands of work, study and personal needs collide, tipping the balance and resulting in disequilibrium and excessive stress (Busari, 2000; Michie, Glachan, & Bray, 2001). Poor coping strategies and personality types may result in additional stress in certain individuals, leading to negative patterns of behaviour and decreased academic performance.

2.2 Definitions of stress

Whether acute, with the onset of unexpected death or loss of job permanency or enduring daily frustrations caused by work or/and family social relationships, the manifestation of stress in a physical or/and psychological reaction is the eventuality of people's coping with these demands of stressors (Bergh & Theron, 2003). The influences and effects thereof on university students, more specifically those in their first-year has only come to light and been researched in recent times.

Hans Seyle (1936) defined stress as the: wide-ranging adjustment condition, where by specific physiological responses are persuaded via a number of external factors, and further perceives it as the imprecise reaction of the body to any request. It cannot be highlighted enough that stress is characterised by a reaction to a stressor i.e. a number of circumstances that persuade a change in the person's collective psychological and/or psychological patterns of functioning. (Warshaw, 1982).

Seyle (1976) viewed stress as "the non-specific response of the body to any change or demand. This essentially means that any change, positive or negative, can cause stress". According to Payne and Cozens (1987) stress can be looked at as a disparity between a person's professed and tangible abilities, and the professed and tangible demands of the environment.

A recent definition of stress promulgated by Eliot (1995) suggests that stress is “a process that occurs when there is an imbalance between demands and response capabilities of the organism”.

One of the pioneering systematic efforts to depict the progression of stress-associated illness was developed by Hans Seyle in 1964. Seyle made mention of the three stages that an individual experiences in a stressful encounter (Cartwright, & Cooper, 1997):

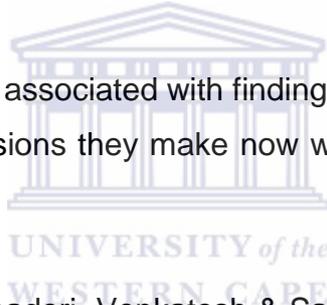
1. Alarm reaction: During this stage, there is a preliminary phase of resistance that is lowered, followed by counter shock. This occurs simultaneously as the person's defense mechanisms.
2. Resistance: Greatest adjustment which engages a thriving restoration towards symmetry for the individual occurs during this stage. Nevertheless, if there is a persistence of stress and if the defense mechanisms do not accomplish the task the individual will continue to the final stage.
3. Exhaustion: Collapse of the adjustment mechanisms takes place as the final stage.

Stress is an unpleasant circumstance of physiological and emotional stimulation that people experience in situations that they perceive as precarious or intimidating to their well-being (Auerbach & Gramling, 2008). More simply put, the daily conditions or strains of life, whether it is choices or actions that tax our individual well-being to the degree that it causes us strain is considered as stress (Ukeh, Aloh & Kwahar, 2011).

According to Lazarus and Folkman (1984), stress is a personal and/or environment relationship in which people assess the weight of a situation as taxing or exceeding coping resources. With this said, the key to understanding, stress and self-esteem is specific to the individual's perceptions of demands and ultimately being able to cope and respond to the demands. Ukeh et al. (2011) postulate that as a general point, it is believed that people with high self-esteem may be able to handle stressful situations better. This seems reasonable because the perception of events. Life as a university student is either as stressful or as challenging as is greatly determined by positive

evaluation of their abilities to cope. Certain features of stress are normal and necessary in providing the way to express aptitude, energies and pursuit of happiness. When this is obtained, stress becomes a positive motivator. According to Ukeh et al., (2011), it may then also be plausible to consider that when stress made on an individual is perceived as so overwhelming that the body cannot cope, the individual motivation will be attacked. As a result, stress can be the source of exhaustion and illness, manifested in both physical and or psychological, such as heart attacks and accidents. The environment of the tertiary institution undoubtedly places many demands and strains on students as noted earlier. These strains comprise inter alia; role overload – assignment deadlines, tests, term papers and examinations. There are certain students who apart from role overload at university combine their busy lives with part time jobs while studying to be able to pay for their education, travelling, food, academic materials etc., as well as making time for friends and family.

Many also deal with pressures associated with finding a job one day or a potential life partner, and whether the decisions they make now will affect their career prospects negatively or positively.



Researchers (Arthur, 1993; Ghaderi, Venkatesh & Sampath, 2009; Misra & McKean, 2000; Ross, Neibling & Heckert, 1999) have confirmed tertiary level of education as a stressful environment. Corroborating this view is the position of researcher Garrett (2001) who suggested that university students have a distinctive group of stressful experiences or stressors. The common consensus among researchers in this area is that stressors apart from being individually experienced do not cause anxiety or tension in themselves, but there are negative effects and/or spin-offs as resultant factors from the interaction between them and the individual's perception as well as response. As mentioned earlier it should be noted that the transition to tertiary institutions creates an alien environment to the individual which itself is cause for heightened levels of stress during the adjustment period of acclimatising to the setting, where constant contact with family and old friends may be reduced. The ability of social support to intercept the results of exposure to stress cannot be over-emphasised (Ukeh et al. 2011).

2.3 Stress models

There exists a multitude of models of stress both in contemporary as well as long standing research. According to Mark and Smith (2008), existing models of stress contain beneficial paradigms of research on stress. However, they further state that even though these models may be beneficial, that various, long standing models can either be critiqued as being too constricted in their design and, furthermore deficient in their role in singular differences or too wide spread and complicated and having a predictive validity which is inadequate.

Mark and Smith (2008) thus proposes a novel method that is a culmination of the characteristics of the prevailing models which comprises of resilient representation of singular variations, psychosocial stressors and perceptions which are subjective.

It is a commonly held view that life in the working sector is changing on a global scale. These modifications, however, lead to rising obstacles and new complications for both the employee and organisation. There are notable variations and degrees in occurrence in relation to changes both in employee and organisation, however a significant amount of these changes mean that employees are undergoing immense stress to acclimatise to the perpetual dynamic strain in their organisation (Cox & Griffiths, 1995). Furthermore, Schabracq and Cooper (2000) propose that the culmination of the innovative technological, global markets and new business products and developments have resulted in unpredictable fluctuations and rising risks. The changes in the way in which organisations operate can as a consequence be progressively heightened in stressful working atmospheres which can manifest itself in various forms.

Examples of these stressful situations affect both the internal and external physical and mental environment; keeping harmony between work and home life, insecurity of one's job, unforeseeable promotional possibilities, shortened vacations, extended working hours, the absence of authority at their organisation, role ambiguity, heightened time sensitive deadlines, incongruent and inadequate compensation,

absence of support, unsatisfactory feedback, harassment and segregation (Griffiths, 1998).

Cox and Griffiths (1995) and Gianakos (2002) propose that these pressures affect the psyche and are known as psychological stressors and have been identified as cautionary elements for numerous physiological and psychological dilemmas inter alia; substance dependencies, imbalance of family and work life, elevated possibilities of heart illnesses, abdominal complications, absenteeism, varying forms of anxiety and depression, and burnout. Notably, the occurrences of the aforementioned physiological and psychological manifestations result in critical complications for the organisation and its employers; possibilities of increased turnover, absenteeism, decreased morale and productivity etc.

2.3.1 The Person Environment Fit Model

In order to assess stress, its characteristics and wellbeing, Lewin (1951) has noted that a person's individual attributes play a vital role in the working surrounding. This approach led to the development of the Person Environment Fit Model. Furthermore this is indicative that the cross between an individual and their working surroundings is vital with regards to its impact on their well-being. Sonnentag and Frese (2003) propose that in order for a healthy environment to thrive, an employee's expertise, attitudes, resources and abilities need to complement job requirements. In addition, their working surroundings should match the employee's skills, capability, understanding and needs. Where there is an inadequacy of matching in one of these factors it can cause obstacles, the wider the disparity between the individual and their surroundings the greater the effects as burdens surpass abilities and need to surpass supply. French, Caplan and Harrison (1982), suggest that well-being related problems, decreased productivity and other organisational issues can relate to burdens and strains. In order to try and lower the mismatch or misfit, defensive mechanisms, function within the model such as coping, denial and reappraisal of needs (Buunk, deJonge, Ybema & deWolff, 1998).

As a criticism of this specific model, Buunk, de Jonge, Ybema, and de Wolff (1998), state that with regards to empirical research, support for the P-E fit model is inadequate. Lazarus (1991) points out that the P-E fit model is indicative of progressive thinking. However, the notion of fit that exists between the individual and their surroundings is assumed as being stagnant with importance placed upon constant relationships comparably looking at the dynamic process of interplay in an organisational context.

2.3.2 The Job Characteristics Model

The Job Characteristics Model (JCM) by Hackman and Oldham (1980), draws attention to critical features of the characteristics of jobs i.e. independence, the importance of tasks, the distinctiveness of the task, the variety of the task and feed - back. The suggested outcomes of the JCM are central to critical psychological states of well-being, knowledge of outcomes, a form of experienced meaningfulness and a form of experienced responsibility. Hackman and Oldham (1980) propose that the resultant psychological states that lead to comparable behavioural and cognitive after-effects i.e. absenteeism, motivation and satisfaction inter alia are given rise to by the affirmative and dissenting characteristics of work. It was observed by Hackman and Oldham (1980) that only some employees will answer emphatically to a job in which the motivating potential is high. Hackman and Oldham (1980) further delineate that there are three features of individuals that are of particular importance in job characteristics; growth needs, particular knowledge and skill to accomplish the work and the specific work context e.g. management, colleagues, remuneration and job security. Satisfaction and motivation will decline if any one of the three features of job characteristics are absent. The JCM proposes that the most significant outcome variable is internal motivation which occurs when a performance of a high standard is the outcome which demands internal satisfaction and a meagre performance stimulates feelings of unhappiness.

2.3.3 The Vitamin Model

The Vitamin Model suggests that particular characteristics of a job have an influence on the psyche that is similar to the system upon which vitamins operate in the body of a human (Warr, 1987). Particular characteristics of individuals' jobs have unwavering properties, whereby the individuals' health rate grows steadily to a particular carrying capacity. After this point, any growth has no significant negative or positive consequences. These consequences include the significance of a particular task, one's particular safety or salary (Buunk et al., 1998). Rather, certain categories such as variety of skill, demands of a job, feedback, responsibility, utilisation of skill and social support are displayed where modest levels are very favourable, but then opposing spectrums of the scale can have damaging health consequences (van Veldhoven, de Jonge, Broersen, Kompier, & Meijman, 2002). According to Buunk et al. (1998), three categories of well-being are suggested: depressed-please, discontent-content and anxious-comfortable. Moreover, one's personal characteristics can assess the effect of a job on one's wellbeing. The Vitamin model presents a thought provoking principle notion. However, authors Buunk et al. (1998) and Sonnentag and Frese (2003) propose that the Vitamin Model, although interesting, suggests that the basis of evidence is questionable and disorderly. In addition, the complete model has not been scrutinised empirically according to van Veldhoven, Taris, de Jonge, and Broersen (2005).

2.3.4 The Michigan Model

This model is constructed on the basis founded at the University of Michigan in 1962 by French and Kahn. The model also goes by the name, the Institute of Social Research Model (ISR Model) or the Role Stress Approach. Similarly to the Person Environment Fit Model, the Michigan Model puts particular importance on the person's perception of that which stresses them. Kompier (2003) postulate that various situational stressors such as the absence of a challenge, shortage of contribution, the amount of work allocated, the designation of roles of the person, conflict, and the permanency of one's job are recognised internally, and personality irregularities, social

support assistance and demography determine these approaches that point towards well-being eventualities.

The Role Stress Approach is given its name by the significant core stressors, one's expectation of their role, the issues of one's role, the ambiguousness of one's role and role conflict (Kompier, 2003). Improvement to the model was done by Hurrell and McLaney (1988). Transition to the U.S. National Institute of Occupational Safety and Health (NIOSH) which in particular looked at iterations of how sickness consequences, stressors, critical reactions and differences of individuals arise. In addition, the NIOSH also draws attention to the manner of causation of stress at work and its role (Huang, Feurstein, & Sauter, 2002). However, in criticism of the Michigan Model, Buunk et al. (1998) suggests that the model lacks a strong theoretical viewpoint and as a result does not easily follow a specific hypothesis. Furthermore, the Michigan model is laborious to assess empirically, because of its complexity. Jones, Smith, and Johnston (2005) demonstrate that for particular facets of a basic Michigan Model with regards to the association between satisfaction of one's job and managerial support, there is varied support. In view of this, Karasek (1979) postulates that an overall absence of empirical backing suggests that it lacks predictive validity in relation to well-being contrasted to other models.

Due to either the intricacy, complexity or elaborateness of the stress models, the multitude of them suggests that there are varying viewpoints on what stress is in particular reference to occupational stress. A diverse number of models, however, suggest that significant interest and research has been made on this particular topic however, the specific models have been more prevalent (Mark & Smith, 2008).

2.3.5 The Job Demands Resource Model (JD-R)

The Job Demands–Resource Model (JD-R) endeavours to portray a wide ranging description at the welfare and several potentially threatening elements related to job stress, this includes its history and ramifications (Schaufeli & Bakker, 2004). According to Demerouti, Bakker, Nachreiner, and Schaufeli, (2001), the JD-R's point of departure

is that irrespective of the nature of the work one is involved in, the categorisation of unforeseen factors can be classified in terms of job demands and job resources. Hence the application of the model is somewhat pragmatically useful to various working environments regardless of the specific job demands and job resources one has to adhere to.

Job demands alludes to the psychological (its emotional or cognitive component), social, physical or organisational facets of the particular work one is involved in. These facets necessitate continual and or unrelenting psychological and physical demands (Meijman & Mulder, 1998). Job demands are not inherently negative, however, when fulfilling any particular demand that necessitates exceedingly high levels of exertion whereby the worker has not recuperated from previous demands, it could cause job stress.

Job resources refers to the psychological (its emotional or cognitive component), social, physical or organisational aspects of work that may, firstly reduce job demands and the accompanying physiological and psychological strains; and secondly are functional in achieving work goals and thirdly, stimulate personal growth learning and development.

According to Van den Broeck, Vansteenkiste, De Witte, and Lens (2008), with regards to extrinsic motivation at work, it is brought about by job resources, to accomplish work objectives as it is needed to deal with job demands. Furthermore, job resources are intrinsically motivating for workers by appeasing one's fundamental psychological need for independence, proficiency and one's sense of belonging. Consequently, job resources are not merely essential when dealing with job demands, they are clearly significant when discussed in isolation. This is congruent with the JCM by Hackman and Oldham (1980) highlighting the motivational capacity of job resources such as feedback distinctiveness of the task, interdependence, the variety of tasks and the importance of task (Bakker & Demerouti, 2007).

2.3.6 The Job Demands Control Model (JDC)

Kompier (2003) postulates that the job demands control model (JDC) by Karasek (1979) is probably the most significant and prominent with regards to stress models in the workplace. Karasek's original JDC model concentrated its efforts on the psychosocial characteristics of the job; job control and job demands. The culmination of the enquiry into this stress model by Karasek (1979) concluded that by identifying individuals who are faced with high levels of demands and but have low levels of job control these individuals exhibited elevated levels of depression, mortality, cardiovascular disease and fatigue. Although the lowermost levels of ill health were found with those people with a reasonable or even high demands or similarly if they had elevated levels of job control. A proposal was made by Karasek to synergise low control and high demands which would forecast high strain, however, high control would reduce the undesirable effect of demands on the results.

According to the demand aspect of the JDC, it is commonly theorised as an interval that is burdened as a result of excessive workloads. The demands facet may also be expanded to include role conflict and role ambiguity (de Bruin & Taylor, 2006). When we refer to the job control element it is regularly theorised as the combination of two mechanisms; decision authority and skill direction. de Bruin and Taylor (2006) suggest that the skill discretion factor typically focusses on variety of tasks and seems to only be indirectly related to job control. Whereas the decision authority factor refers to the prospect of making autonomous decisions and ultimately have a vice in organisations.

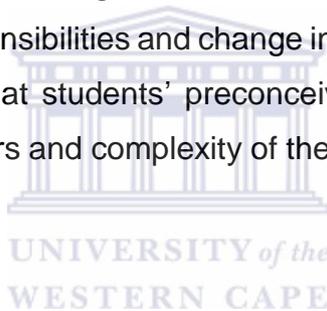
2.4 Sources of stress

The various sources of stress that were identified in the literature include the following: The imminent transition between school and universities, as part of the shift to higher education in South Africa, makes students feel uncertain about how these transitions are going to affect them and their future studies. Fear of failing, financial and accommodation problems featured very strongly, with deaths of family members and significant others also featuring prominently (Pillay & Ngcobo, 2010). Burnout has also been the focus of recent research on university students, and which correlated directly with stress (Balogun, Helgemoe, Pellegrini & Hoerberlein, 1996). Bean and Hammer

(2006) carried out research which examined students' perceived stress level in relation to their academic workload. Amongst these students selected 55% were reported to have ignored at least one module or subject in preparation for another.

Academic stress is also connected to the ability to cope with demands. One such demand can be seen as emotional stress, such as anxiety and students appraisals of stressfulness of role demands. (Talaei, Ardani, & Saghebi, 2008).

According to Ross, Niebling and Heckert (1999), research was done which looked at major sources that accompany stress among university students. They used a survey which consisted of 40 stressful situations. The survey used to determine the sources of stress was the Student Stress Survey. The most frequently reported stress sources by students incorporated the following: vacations/breaks; change in sleeping habits; increased workload, new responsibilities and change in eating habits. In another study, Schneider (2002) theorised that students' preconceived workloads required by the university, rivalry between peers and complexity of the programme of study to be very stressful.



2.5 Perceived stress and the use of various coping strategies by university students

The ability to be able to confidently and precisely (including the error of measurement) forecast the categories of stress and the lifestyle of a university student would allow the researcher to determine the essential or detailed coping approach students use when under stress. The implications thereof are fundamentally important and the light that could be shed on the stressful situations that these individuals go through and the methods they use to cope during these trying times are crucial. This information could aid first-year students to come to terms with this perceived stress by creating awareness amongst them.

Kausar (2010) theorises that: the relationship between perceived stress and academic workloads yielded a positive relationship among students. The type of stress perceived by the student as well as the academic workload would forecast the kind of strategy students used to cope. For the purposes of the assessment the following

instruments were used: an academic based workload scale, a coping strategies questionnaire and a scale that measures perceived stress.

The completion of the assessment measures was done by the student in the company of the researcher. The analysis of the data was determined using a regression analysis as well as a correlation. In relation to a negative relationship avoidance coping and active distractive was found, whereas a positive relationship was yielded between active practical coping strategies.

Kausar (2010) postulates that the result of this research has crucial inferences for students of higher learning and further emphasised the significance of counselling in institutions of higher learning which, in turn, may improve their overall academic performance.

2.6 Sources of stress and support among rural-based first-year university students

The various incidences of stress that university students frequently experience are of particular concern. This is a matter of alarming proportion especially due to the fact that it affects the students' level of academic performance and extent to which they are able to function. The rise in failure rate is cause for a great deal of concern with high failure and dropout rates commonly found amongst first-year university students (Letseka & Breier, 2008). This is supported by reports on the mental health series and furthermore associated where current university students present in counselling centres (Naidoo, 1999). In the light of recent research the receptiveness of university students has been highlighted and the requirement to provide support in mental health at university for this designated group is vital looking at the occurrence and signs of depression and notions of infliction of self-harm (Garlow, Rosenberg, Moore, Haas, Koestner, Hendin & Nemeroff, 2008). Research concluded that one out of ten students had notions surrounding suicide and one out of six students had attempted suicide. With relationships to family ties and family structures being the crucial variable, research has linked suicide to stability of family relationships, depicting this as a key risk aspect in university students (Gencoz & Or, 2006).

A recent South African study by Letseka and Breier (2008) has shed light on the highest known ranks of motivation for dropping out of university by Black African students, which was due to financial constraints. In this context, given the historical social and political factors in South Africa (Apartheid), finance must be considered a serious stressor among students from previously disadvantaged backgrounds. Similar research in the United States yielded results that found financial struggles a noteworthy stressor among university students, which was found to be more prevalent in less affluent communities (Clark, 2005); the subsequent consequence thereof in relation to their academic performance is further significant. The intention of this research was to evaluate the effects of various stressors on a daily basis in the lives of students at a previously black university. The presumption was purported that students would account for incidences that are characterised by high volume of stressors inclusive of this relating to economic circumstances. The predominant sample selected in this study were those with low socio economic standings, as the populations were mainly situated in rural areas. In this specific study, “stressors” commonly referred to situations and events in their lives that had possible undesirable behavioural or mental influence on their outcome (Beehr, Bowling, & Bennett, 2010).

2.7 What stresses university students?

The harmful, depressive adverse effects of various facets of a person’s life whether physical health, relationships and/or performance at a cognitive level (Druss & Rosenheck, 1999; Judd, Paulus, Wells, & Rapaport, 1996; Lyness, Heo, Datta, Ten Have, Katz, Drayer, Reynolds, Alexopoulos, & Bruce., 2006; Nutt, 2004) is commonly presented as key attributors towards burdening disease (Ustun, Ayuso-Mateos, Chatterji, Mathers, & Murray, 2004). Research on the European population show that 13% of individuals experience a main incident of a depressive nature some point in their life, the United States was slightly higher at 17% (Alonso., Angermeyer, Bernert, Bruffaerts, Brugha, Bryson, Girolamo, & Vollebergh, 2004; Kessler, McGonagle, Zhao, Nelson, Hughes, Eshleman, Wittchen, & Kendler, 1994; Kessler, Bergland, Borges, Nock, & Wang, 2005) and 8% in Australia (Hawthorne, Goldney, & Taylor, 2008).

According to Bitsika, Sharpley and Rubenstein (2010), one particularly taxing phase of life is the onset of adulthood, for the duration of which several people commence the added weight of furthering their studies in tertiary institutions which is said to have contributed to the fairly elevated frequency of depressive conditions among students in university (McLennan, 1992; Tanaka & Huba, 1987). This is illustrated by Alloy, Abramson, Whitehouse, Hogan, Panzarella, and Rose (2006) where the author provides information which shows that 16% for more severe cases of depression and 45% for lesser depression, were found throughout the initial three years of tertiary education and more notably found amongst students who had no prior records of depressive conditions. Tjia, Givens and Shea (2005) reported that 15% of university students were reported to have depressive conditions and 20% who were stated to have notions of suicide, of this only 27% obtained treatment for their psychological condition. The elevated stages of depression that are found amongst students can also impinge on their academic performance (Dyrbye, Thomas & Shanafelt, 2006), compounding the taxing stressful event. The relevance of these matters are of significance to counsellors at university and. Furthermore it is of importance as the counsellors are able to rationalise and have increased evaluations and insights into the causes of stressors that arise and are experienced by university students.

Scott and O'Hara (1993), theorise that the stressors that are inclusive in the transition towards university life include various obstacles inter alia academic, financial, social and sexual demands, as well as deprivation of sleep. Stressors which are known to be associated with depressive situations that are found among university students are: level of self-efficacy and low self-esteem (Oliver & Paull, 2006), satisfactorily relaxation time and ineffective planning skills (Misra & McKean, 2000), unreasonable philosophies and abuse of alcohol (Camatta & Nagoshi, 2006), abuse of family members or spouse (Silvern, Karyl, Waelde, Hodges, Starek, Heidt, & Min, 1995), self-efficiency and pressure in conforming to different traditions result in (Constantine, Okazaki, & Utsey, 2004) suicidal notions and actions (Kisch, Leino & Silverman, 2005).

2.8 The predominance and sociodemographic interrelations of stress, anxiety, depression among university students

According to Bayram and Bilgel (2008), the state of the psyche of university students is a rising distress internationally. Bayram and Bilgel (2008) study set out to determine the frequency to which anxiety, depression and stress occurred among university students. In the study 1617 university students finished the Depression Anxiety and Stress Scale (DASS-42). Bayram and Bilgel (2008) postulate that among the 1617 students studied, 27% exhibited moderate to severe levels of depression, 41% of which were shown to have moderate to severe levels of anxiety and 27% were shown to exhibit moderate to severe levels of stress. Heightened levels of stress and anxiety were found to be more prevalent among female participants. It was also concluded from the results that among the university students, 1st year and 2nd year students displayed more heightened levels of stressful, anxiousness and were more depressive in nature.

Bayram and Bilgel (2008) suggest that lesser levels of stress anxiety and depression were associated with university students who were content with their academic standings in contrast to those who were discontent. In the study light was shed on the fact that this high incidence of anxious depressive and stressful natures of university students is shocking. This essentially dictates the necessity to put in place preventative measures in both primary and secondary forms of education in order to improve on the sufficient and suitable services that can support this group.

As with most individuals with the onset of adulthood, they face various changes that occur and subsequently need to cope with, which include both psycho-social as well as psychological aspects. Educational and social strains are some of the issues that university students are subjected to as groundwork for the eventual career.

The growth period of an undergraduate is considered as vitally important as it could avoid and lessen psychological problems as this period is also considered as a time where the student is vulnerable to many external agents. Bayram and Bilgel (2008), state that there is support in relation to the allegation that implies that there has been

an amplified societal concern around the notion of university students' disposition to problems regarding mental health. The representation of societal health concern in relation to university students has been ignored and poses serious implications for the psychological policymaking and services of health in universities (Bayram & Bilgel 2008). In relation to the quality of life, according to Bayram and Bilgel (2008) considering the possible effects of this ignored societal well-being concern on the academic achievement and attainment of potential career success is imperative.

2.9 Effects of expressive writing in relation to stress

According to Frattaroli and Dickerhoof (2006) practically speaking, the execution of caring for or progressing the level of one's health, welfare and overall performance whilst undergoing a stressful incident, can be reconciled by the expression of an individual's innermost notions and sentiment, through what is known as "experimental disclosure" or "expressive writing". Various advantages have been indicated in past research in relation to meaningful writing such as reduction of stress (Barry & Singer, 2001), diminishment of exhaustion, strain, decline in negative respiratory signs (Lepore & Greenberg, 2002), and ultimately advancement in operational standing (Hamilton-West & Quine, 2007).

Pennebaker, Colder & Sharp (1990) suggest that trial discovery interventions aid people in the liberation of their psyche, of particular unnecessary thoughts, gaining the ability to understand occurrences that are displeasing, how to enhance the understanding and regulation of their emotions and furthermore to develop the relationships they have with society. Pennebaker et al. (1990) further proposes that these interventions have possibilities in the development of one's overall welfare and health. The way in which emotions are expressed through written or vocal means i.e. evaluative or contemplative, is engaged through facing specific stress relevant notions and perceptions (Pennebaker, 1989).

One specific report on expressive writing describes that participants in the study were informed to express in words a broad range of stressful events. The outcomes of this report identified themes that frequently comprised of having to manage ill health and

dealing with bereavement and adjusting to the life of university (Pennebaker et al 1990). One significant stressor among university students that has been regularly highlighted in research according to Lewis, Nikolova, Chang, & Weekes (2008) is the graduate entry exam. The characterisation of the increase in cortisol as well as heightened states of apprehension and perceptible pressure (Lewis, Weekes, & Wang, 2007) during the time leading up to examinations is seen as a basis of a crucial, stressful and strenuous event in the life of a student.

Lepore (1997) postulates that in preparation for the graduate entry examination, students who were subjected to writing meaningfully with regards to their innermost reflections and sentiments towards the exam, displayed a particular meaningful abatement in depressive symptoms preceding the examination. Students in the control group, however, who wrote on subjects of a more inconsequential nature sustained a moderately increased level in depressive symptoms during the aforementioned time.

In a study by Lepore (1997), students planning to take a graduate school entrance exam who were assigned to write expressively about their forthcoming examination, displayed a considerably vast decrease in depressive signs preceding the examination in comparison to those who did not write expressively on matters pertaining to their depressive symptoms. The expressive writing however did not affect the occurrence of unpleasant notions but rather alleviated the impact of unpleasant notions on symptoms that are depressing.

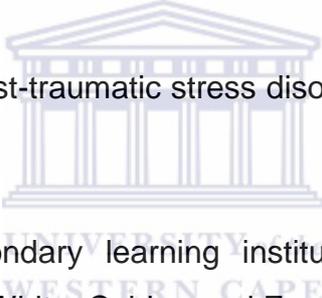
This study by Lepore (1997) was used as a pretext to further inspect the result of the participants' expressive writing with the notion of an impending stressor that is present. The idea behind the study was to further aid students in their studies and to successfully deal with the stressors that are present in their academic life. However, as the results of the actual examination were not gathered, it can thus not be confirmed with regards to the changes in the performance of the students during the exam. The reduction of levels of anxiety has been said to be associated with expressive writing (Frattaroli, Thomas & Lyubomirsky 2011).

As a final point the cognitive operation and functions have been highlighted as improved areas of functioning (Pennebaker & Francis, 1994) according to Klein and Boals (2001); Yogo and Fujihara, (2008) these include functioning recollections.

The aims in the study of expressive writing were thus two-fold; firstly, the determination of performance in examinations could be enhanced by writing expressively, which would thus expand on Lepore's (1997) findings, secondly, to establish whether a reduction of the anxiousness of a test as well as depressive situations can be made prior to a graduate entry examination.

Frattaroli et al (2011) theorised that expressive writing would incur significant change i.e. the overall improvement of examination entries as well as the affiliation of test results and writing being mediated by anxiety and depression.

2.10 Trauma exposure and post-traumatic stress disorder among newly matriculated university students



The transition between secondary learning institutions and tertiary institutions according to Read, Ouimette, White, Colder, and Farrow (2011) could possibly be an exceedingly demanding for individuals who have a prevalence with trauma and chronic stress such as Post-Traumatic Stress Disorder, (PTSD). For many reasons, for example suitability and ease of accessibility to students, there have been extensive records of the psychological occurrences of observing university students. In the pursuit of furthering knowledge on this population, substantiation has arisen to suggest that students at university are inter alia in a distinctive progressive phase of life as well as customs. (Arnett, 2000; Sher & Gotham, 1999).

As is the occurrence in the U.S, a substantial percentage (just over 33%) of individuals from the ages 18- 24 are at present in university (U.S. Bureau of the Census, 2007), which in addition supports the argument that the examination into psychology of this population is crucial.

The transition between secondary learning institutions and tertiary institutions is shown to be a crucial stage, as during this phase individuals generally relocate to unfamiliar environments, functions and generate new affiliations as well. Furthermore, regardless of additional taxing life incidents for example the fact that students might be at danger of sexual attacks (Humphrey & White, 2000; Wood & Sher, 2002) a minority of assessments of PTSD in samples of university students have been found.

2.11 Psycho-social factors and academic performance among African women students at a predominantly white university in South Africa

Research on academic performance of Black students in predominantly White universities point to various factors which have been investigated and found to have a bearing on these black students' performance. These factors can be classified into two major research groups which specifically typify study patterns of Black students in White universities. These two studies are categorised into psychological concepts within the individual and studies of external elements inflicted on the individual (Malefo, 2000). However, a number of researchers in principle dismiss the postulation that academic performance is completely reliant on cognitive aspects, and furthermore focus on the intertwinement of socio-emotional, intra-psychic and other non-cognitive variables in the development of academic achievement or failure for Black students (Allen, 1992).

In the two major categories of research in relation to academic performance of black students in white universities, the central concepts that surface are the significant relationships of stress and coping mechanisms and adaptation as well as that of family factors that affect their academic performance (Jenkins, 1989). The factors include: the identification of racial discrimination, few peers who are black (Fleming, 1984), the affiliation or seclusion of faculty and staff (Kleemann, 1994), the lack of communal support, non-functional coping mechanisms and supposed belief (Fleming, 1984).

The previously mentioned studies tend to criticise the need to help Black students adapt to the White university environment, thereby undervaluing the evenly persuasive

need for these universities to adapt to the growing diversity of their students. Several studies have produced findings supporting the notion that institutions need to change to accommodate greater diversity, rather than to expect students to adapt to institutional practices. It is argued that it would also be useful to both students and universities to pay attention to institutional problems that inhibit student success (Kleeman, 1994). University environments that fail to embrace diversity are also a source of stress.

2.12 Measurements

In relation to the evaluative contrast of the Student Academic Stress Scale, six instrument will be discussed as a means for determine levels of stress amongst students.

Acculturative Stress Scale for International Students (ASSIS): According to Sandhu and Asrabadi (1994) the ASSIS was formulated to determine the mental responses of international students in the subsequent ranges: stress due to change, guilt, homesickness, fear perceived, deprivation, loneliness, hate and alienation. The pencil and paper self-report questionnaire which is the ASSIS consists of 36 items furthermore it has seven subscales: Nonspecific, Perceived Hate, Guilt Homesickness, Perceived Discrimination, Stress Due to Change/ Cultural Shock and Fear. In terms of the process of answering the questionnaire respondents are provided with a five point Likert scale ranging from *Strongly disagree* (1), *Disagree* (2), *Not sure* (3), *Agree* (4) to *Strongly agree* (5) in which they circle the appropriate response. In terms of internal consistency the ASSIS has been shown to have elevated scores in this category. According to Sandhu and Asrabadi (1998) these scores range from $\alpha = .87 - .95$ with regards to the sum of the items calculated by the Cronbach's alpha.

Student Problem Inventory (SPI): Developed by Bakare (1977) the SPI is a self-report inventory. The SPI involves a process whereby the respondents relate their private details/difficulties of their lives based on their ability to perceive them and furthermore, the length and degree to which they are prepared to discuss them. This inventory employed a technique which makes available data in a clear cut timely

fashion regarding critical concerns to specific student groups. Eleven areas of difficulty are analysed in the SPI, each of which is referred to as “Section” namely: 1. Physical and Health Problem 2. Financial Problem 3. Social Relationship Problem 4 Sexual Problem 5 Social Psychological Problem 6. Personal Psychological Problem 7 Moral and Religious Problem 8. Family Problem 9. Problem about the Future 10. Academic and Study Problem 11. School adjustment Problem. The SPI is quantified by tallying up the sum of the “ticks” in every segment in the column labelled “Raw Score” which is on the underside of the SPI. The sum of these “ticks” are called the “Total Raw Score”. The suitable table of Norms should be referred to in order to acquire the stanine equivalent for every sections raw score.

Depression, Anxiety and Stress Scale (DASS): According to Antony, Bieling, Cox, Enns and Swinson (1998), the DASS is another self-report scale which is based on 42-items intended to quantify tension/stress, depression and anxiety which are the three related negative states of emotion. The DASS-21, however, is an abridged form of the full version of the DASS, and notably comprises of 21 statements which outline signs of stress, anxiety and depression.

The 21 items of the DASS-21 are categorised into subscales of three, every subscale containing seven items: Stress, Anxiety and Depression. In answering the DASS-21 respondents are required to specify the degree to which Stress, Anxiety and Depression symptoms are experienced for the duration of a week. Lovibond and Lovibond (1995), advise that the DASS-21 is a self-report measure which uses a 4-point severity/ frequency Likert scale i.e. *Did not apply to me at all (0)*, *Applied to me to some degree, or some of the time (1)*, *Applied to me to a considerable degree, or a good part of the time (2)*, and *Applied to me very much, or most of the time (3)*. With regards to the Cronbach alphas for the DASS-21 it scores for Depression $\alpha = .94$, Anxiety $\alpha = .87$, and Antony et al. has gathered from the DASS-21 in the Australian Academic Stress Scale Stress $\alpha = .91$.

Eysenck Personality Questionnaire — Revised (Extraversion) (EPQ-R (E)). The EPQ-R (E), (Eysenck, 2006) is an instrument derived from Eysenck’s (1967) biosocial personality theory, where it is suggested that personality is the sum of physiological

influences and the interplay among self-restraint and surroundings and comprises of three temperament traits: psychotism or *tough mindedness* (P), extraversion-introversion (E) and neuroticism or *emotionality* (N) which create personality based on the interaction with the surroundings (Kemp & Center, 1998). A Lie (L) category was also found in Eysenck's questionnaire which has been presented to operate as a catalogue of socialisation or social adherence (Eysenck & Eysenck, 1975). Twelve items are contained in the EPQ-R (E) which is a self-report instrument and is a part of the 48 item EPQ-R Short Scale. It was intended explicitly for use as surveys, making available swift calculations of extraversion- introversion, neuroticism or *emotionality* (N), psychotism or *tough mindedness* P and Lies (L). Respondents are questioned as to the extent to which they concur with each statement provided and furthermore to circle "yes" or "no" (Eysenck, 2006). According to Eysenck, Eysenck and Barrett, (1985) the Alpha coefficients stated for all scales are, for P $\alpha = .78$ (males) and $\alpha = .76$ (females), for E $\alpha = .90$ (males) and $\alpha = .85$ (females), for N $\alpha = .88$ (males) and $\alpha = .85$ (females), and for L $\alpha = .82$ (males) and $\alpha = .79$ (females).

Student-life Stress Inventory Scale (SSI). The SSI is an instrument used for the purpose of quantifying stressors and their reactions to these stressors. The SSI questionnaire is a self-report which consists of 51 items of which there are nine subscales centered on a hypothetical framework by Morris (1990). The focal points of the model has five stressors: Frustrations, Conflicts, Pressures, Changes, and Self Imposed. In addition four categories of Responses to Stressors are evaluated: Physiological, Emotional, Behavioural, and Cognitive Appraisal. Gadzella (1991) points out that the respondents are required to specify the choice that greatly defines their understanding of stress by means of a five point Likert scale with categories of *Never* (0), *Seldom* (1), *Occasionally* (2), *Often* (3) and *Most of the Time* (4). With regards to the Internal consistency, it has been confirmed on a sample made up of 381 participants, 258 who are females and 120 who are males and scored $\alpha = .92$ for the total test scale. Overall Stressors stated a Cronbach's alpha of $\alpha = .92$, Frustrations $\alpha = .70$, Conflicts $\alpha = .68$, Pressures $\alpha = .80$, Changes $\alpha = .86$, Self-imposed $\alpha = .63$, Total Reactions to Stressors $\alpha = .75$, Physiological $\alpha = .86$, Emotional $\alpha = .82$, Behavioural $\alpha = .71$, and Cognitive Appraisal $\alpha = .82$ (Gadzella & Baloglu, 2001).

Student Academic Stress Scale (SASS) The SASS was used in the current study. The SASS is an instrument with the capacity to determine the level of stress in university students in the stress response ranges: Physiological, Behavioural, Cognitive, and Affective. Upon completion of this questionnaire students apportion how often they feel signs on a five point Likert scale with anchors *None of the Time* (1), *A Little of the Time* (2), *Some of the Time* (3), *Most of the Time* (4), and *All of the Time* (5). In the SASS the items in the instrument are totalled for subscales scores and are added for a total SASS stress response score. Elevated scores suggest a better stress reaction. Analysis of wide ranging stress and academic stress literature was used to produce the items for the SASS. A preliminary research study was done where 77 items were chosen and further verified. In this particular study the 77 items were completed, in addition to this the Kessler-10 a checklist of non-explicit psychological depressive symptoms was also completed. A confirmation of the 4-factor compositional configuration was done via SASS by means of principal components analysis.

Further investigation through reliability analysis indicated that by disposing of 27 items improved the scales, which was done by means of a 4 factor analysis incorporating the "leave one out" procedure. An adequate to exceptional internal consistency of .65 to .96 was generated from the remaining items. The SASS used today employs these 50 items to quantify the responses of students in relation to academic stress.

Validation studies of the SASS were conducted using three universities in South Western Nigeria. Data from a sample of 750 students of varying nationalities were analysed. In order to determine the adequacy of the factor analysis, inferences of the suitable sizes of samples, absent values, multicollinearity (which basically suggest what predicting variable in a multiple regression models is highly correlated), singularity, outliers and linearity were evaluated preceding the analysis. A sum total 740 occurrence in the factor analysis was found due to a number of multivariate outliers that were identified and as a result taken out of the data-set. According to Tabachnik and Fidell (2007), a derivation suggesting that oblique rotation was used is evident due to the fact that a significant portion of the inter-item correlations were more

than .30. In relation to sphericity, which suggests that a circumstance exists where deviations of the changes among all potential pairs of groups are equivalent

A Kaiser-Meyer-Olkin (KMO) analysis supported factorability, $R = .92$ and Bartlett's test indicated a breach of sphericity, $\chi^2 = 4099.48$, $df = 105$, $p = < .01$. However, factor analysis is robust to breaches of sphericity especially when the sample size is large (Tabachnik & Fidell, 2007). A Cattell scree plot and Kaiser's criterion identified a 4-factor solution that explained 61% of variance in scores.

Confirmatory factor analysis generally supported the four factor structure of the SASS, with affective (factor 1), behavioural (factor 2), physiological (factor 3), and cognitive (factor 4) stress evident. All item loadings on the Cognitive factor were negative, suggesting that this factor was identifying a process other than stress as seen in the first three factors.



2.13 Summary

These were but a few, concise reviews of a multitude of information and research available on the aforementioned topic (*The effects of stress amongst first-year university students*). However, it was relevant to include the previously mentioned articles as they are of particular relevance to the study being researched.

As a final point, innovative systems and frameworks of social support must be sought, created and integrated into the continuous life of the student. The undertaking of making new friends is in itself stressful but when successfully attained could add to social acceptance or recognition which inevitably could lesson stressful times and situations.

Hudd, Dumlao, Erdmann-Sager, Murray, Phan, Soukas, and Yokozuka (2000) have posited that students must be taught to balance the challenging demands of academia, developing new contacts, and be responsible for their daily needs, which are but a few possibilities of lessons for lowering stress levels. The methodology of the study is discussed in Chapter Three.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

From the literature study discussed in chapter two, it is evident that stress comprises a multitude of facets in relation to how it affects students' personal and university lives. Stress can either be a great motivator in moderation or in excess can cause detrimental effects to people's health or more notably causes distress among students at university in the form of failure or dropping out of the university. The literature review relating to stress was presented in chapter two. In the present chapter the methodology of the study is highlighted. This chapter provides an overview of the research methodology in the form of the research design, description of participants, and the procedure used to collect the data as well as the description of the psychometric properties of the questionnaire used to measure stress in the current study. The data analysis techniques and ethical considerations are also discussed in the current chapter.

3.2 Research Design

A quantitative research design was used to answer the research hypothesis theorised in the present study. The quantitative research design falls into the positivism research paradigm. The application of the positivistic methodology to social sciences is based on the scientific methodology applied in the natural sciences. The positivistic approach acknowledges that the natural as well as the social sciences share some similarities (Babbie & Mouton, 2001). Understanding and studying human behaviour systematically as in the natural sciences allows researchers to control the quality of research as well as facilitate the rigorous and objective study of reality/human behaviour and also ensures that the resultant decisions made from the studies are accurate (Bryman, Bell, Hirschsohn, Dos Santos, Du Toit, Masenge, Van Aardt & Wagner, 2014).

3.3. Research participants and sampling procedure

3.3.1 Population

According to Sekaran (2000), a population is a group of people or objects that possess one or more qualities and reside in a particular region. The population that will be included in this study is made up of first-year university students in selected faculties at a selected university in the Western Cape Province.

In terms of practicality, the possibility of attaining relevant information from the entire population of approximately 4000 first year students of interest was not feasible and would be time consuming. Consequently, a subset of the population or sample thereof was selected for the purpose of the study. A sample can be defined as a choice of individuals taken from the target population in order to imitate the target population's specific and significant characteristics in all respects (Brewerton & Millward, 2001). The generalisability of the population in question is reliant upon the researcher studying the sample and thus being able to draw sufficient conclusions there from (Sekaran, 2000). 306 participants took part in the current study. The participants were drawn predominantly from the Arts, Economic and Management Sciences, Community and Health Sciences and Law.

3.3.2 Sampling procedure

The two forms of sampling are namely: probability sampling and non-probability sampling. Where all known participants in the populations are given an equal or known or acknowledged opportunity or a chance of being selected as a subject is known as probability sampling. Probability sampling is well known for being the preferred method of sampling that results in more accurate generalisations to the population as compared to convenience samples drawn using the non-probability sampling techniques. The different categories of probability sampling include: simple random sampling, systematic sampling, and stratified sampling (Brewerton & Millward, 2001).

The occurrence of non- probability sampling takes place and occurs in positions where the sampling techniques are either not viable or needless. In these situations, cheaper,

less resource intensive, non-probability methods in this instances are used. Convenience sampling was used due to the fact that most of the students could only be interviewed just before or towards the end of a lecture.

One of the significant factors in sampling is the size, notably the increased size has to be sufficient hence to be able to make extrapolations with regards to the total population of the research in question (Terre Blanch & Durrheim, 1999). Sekaran (2000) proposes the use of Krejcie and Morgan's (1970) table which presents a generalised numerically formulated guide which significantly streamlines the process of determining the size of a given sample based on its population (See table 3.1).

Table 3.1.Determination of sample size

Table for Determining Sample Size from a Given Population

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size.
S is sample size.

306 participants took part in the study. Of the 306 students 79 constituted male (25.8%) and 227 constituted female (74.2%). A significant percentage of the population was between the 18 (16.7%), 19 (32.7) and 20 (19.9%) age group. The distribution of participants in terms of languages was English 135 (44.4 %), Afrikaans 54 (17.6%), Xhosa 95 (31.0%), Zulu 5 (1.6%) and Other 16 (5.2%). The Socio Economic status was distributed as High Income 6 (2.0%), Middle Income 164 (53.6 %) and Low Income 101 (33.0%). The registration status of students was as follows Part Time 57 (18.6 %), Full Time 205 (67%). The Distribution of faculties was Arts 223 (72.9%), Education 1 (.3%), Natural Science 2 (.7%), Community and Health Sciences 26 (8.5 %), Economic and Management Sciences 24 (7.9 %), Law 28 (9.2 %) and Other 1 (.3 %). Table 3.2 shows the demographic distribution of the sample.

3.4 Data collection and procedure

The method of data collection used in this study was a questionnaire. The questionnaire measured perceptions of stress amongst first-year university students within the selected academic setting. The biographical details in Section A includes the following information: age, gender and home language spoken. Section B was made up of stress items.

Only first-year students took part in the study. Data was collected through the use of a questionnaire. The rationale for using this questionnaire as a method of data collection was simply for the following reasons; a questionnaire allows one the opportunity to build rapport with the participants and motivate them to complete the questionnaire enthusiastically and honestly. Any doubts can be clarified when using the questionnaire. The questionnaire can also be less expensive when administered to a group of respondents and a high response rate is assured. The questionnaire also allows for high anonymity of the respondents (Sekaran, 2000).

A covering letter was attached to the questionnaire indicating to the respondents the particular reasons for the study and, furthermore gaining their informed consent.

It was also communicated verbally and in the covering letter that all information given by the respondents would remain confidential and anonymous. The name of the study coordinator as well as the email address and telephone number were included in the covering letter in the event that the respondents had some questions at a later date.

The initial idea was to collect data via emails to various first-year students through the university data base system of the different faculties. However, the researcher was advised to administer hard copy questionnaires in order to obtain a better response rate. The initial round of data collection involved handing out 80 questionnaires to students during a lecture and allowing them to complete the questionnaires and return them during the following lecture. This was mainly due to students not getting time during the lecture to complete the questionnaires. The students returned with only 6 completed questionnaires. After consultation with various lecturers in different faculties, permission was granted to use a portion of the lecturing time to allow students to complete and hand in their questionnaires. This yielded a much stronger response rate and as a result 306 questionnaires were collected.

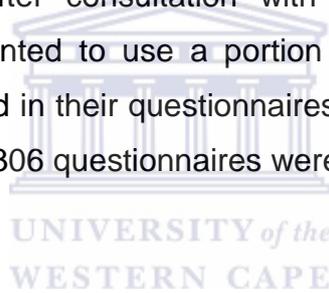


Table 3.2

Demographic distribution of the sample

Variable	Frequency	Valid Percentage (%)
Gender		
Male	79	25.8
Female	227	74.2
Age of participants		
20 and below	213	69.6
21 – 30	64	20.9
31 – 40	13	4.3
40 and above	5	1.6
Home Language		
English	136	44.4
Afrikaans	54	17.6
Xhosa	95	31.0
Zulu	5	1.6
Other	16	5.2
Faculty		
Arts	223	72.9
Education	1	.3
Natural Sciences	2	.7
Community and Health Sciences	26	8.5
EMS		
Law	24	7.8
Other	28	9.2
	1	.3
Socio-economic status		
Hi-Income	6	2.0
Middle-Income	164	53.6
Low-Income	101	33.0

3.5 Measuring Instruments

Stress questionnaire

Stress was measured using the SASS questionnaire developed Busari (2011), the instrument is made up of 50 items measuring the affective, cognitive, behavioural and physiological dimensions of stress. This particular questionnaire uses a five point scale to assess the participant's level of stress and to determine the potential sources of stress. The numbers 1- 5 represent the following:

- 1- None of the time
- 2- A little of the time
- 3- Some of the time
- 4- Most of the time
- 5- All of the time

According to Busari (2011), the Cronbach alphas measurement produced exceptionally significant reliability in the SASS, for its scales and subscales. Furthermore the internal consistency score was decent and the alpha scores were above .80. This is indicative that the academic stress responses are of a particularly reliable degree.

The Student Academic Stress Scale Questionnaire (SASS) demonstrated good convergent and divergent validity when assessed against the Acculturative Stress Scale for International Students (ASSIS), Student Problem Inventory (SPI), Student-life Stress Inventory Scale (SSI), Depression, Anxiety and Stress Scale (DASS) and the Eysenck Personality Questionnaire — Revised Extraversion (EPQ-R (E)). The SASS was highly correlated with SPI, SSI and DASS indicating that the SASS' measurement of stress is in alignment with that of reputable scales. The SASS, along with the other stress scales, showed a low correlation with the ASSIS, indicating that the ASSIS is measuring a different type of stress (i.e., the ASSIS focuses upon acculturative stress). The SSI and SASS subscales were assessed to determine if the SASS subscales (Affective, Behavioural, Physiological and Cognitive) had validity against another measure of these stress responses.

The results indicated that the scales significantly positively correlated, with only the correlation between Cognitive factors being low. Criterion validity was predicted to be shown between the SASS measures of stress and the related constructs of depression and anxiety.

3.5.1 Hypotheses

According to Sekaran (2000), the rational inferred relationship between two or more variables conveyed in the structure of a statement that can be tested can be thought of as a hypothesis. Furthermore Sekaran (2000) explains that the hypotheses should be tested to confirm the inferred relationship(s). Keeping in line with the aforementioned definition, the following hypotheses have been developed.

1. There are gender differences on stress perceptions among the identified student sample.
2. There is a relationship between age (age was a continuous variable) and stress perceptions.
3. There are no significant language differences in relation to perceived stress.
4. There are no significant differences in stress perceptions in terms of socio-economic status.
5. There are no significant differences in stress in relation to faculty.

3.6 Data analysis

3.6.1 Missing values

In order to initiate the analysis for the study, the missing values from incomplete questionnaires had to be addressed. Mels (2003) suggests that in self-reporting instruments, missing values are a common occurrence. Mels (2003) advised that care must be taken when choosing the correct method to ensure that it does not have negative effects on the analysis itself. In addition it must be determined that these values are missing at random, rather than a systematic pattern of similar items which are missing. This can cause problems in that it may suggest that complete values differ

from incomplete values for a specific reason rather than by chance or random (Kline, 2011).

According to Yuan (2011), multiple imputation is a preferable tool for handling sets of data which invariably have missing values. Rubin (1987) suggests that rather than inserting an individual placement value for every missing value, the multiple imputation method substitutes every missing value with an estimate value that can replace the missing value. The data sets that are imputed are then evaluated by employing typical techniques that are used for complete data and linking the results from the evaluation. Irrespective of which data analysis is used, the technique of linking resultant data from diverse imputed sets of data are basically alike. The outcome of this ultimately results in “valid statistical inferences” that accurately show the estimation as a result of the missing values (Rubin, 1987). The multiple imputation method available in the PRELIS an option in LISREL 8.80 software was used to address the problem of missing values. The final sample size is 306.

3.7 Item and dimensional analyses

Reliability analysis, test for uni-dimensionality via exploratory factor analysis (EFA), was conducted on each of the subscales of the instrument (SASS). A t-test was used to find if there were significant differences in stress in terms of gender. In order to ascertain differences in terms of: registration status of students, language and socio-economic status, a One Way Analysis of Variance (ANOVA) was used. The relationship between age and stress was analysed using the Pearson correlation technique. In this study, the participants gave their exact age hence age was treated as a continuous variable.

Reliability essentially refers to consistency. An instrument that is termed to be reliable, provides equivalent results upon constantly measuring the same occasion or unaffected objects. Thus, reliability analysis needs to be made to ensure uniformity and consistency of the instrument.

Suhr (2006) proposes that EFA can simply be defined as a systematic interpretation of interconnected measures. The EFA will establish the amount of constructs as well as the fundamental structure of the factor.

According to Sekaran (2000), Analysis of variance (ANOVA) assists in the examination of the important mean differences between more than two groups. Field (2005) suggests that even although ANOVA sheds light on determining if the empirical manipulation was effective, what it does not do is contribute particular information regarding which of the groups were actually affected.

3.8 Ethical considerations

This study has been structured in such a way that it does not cause any psychological or physical harm to the respondents. This study respected both the anonymity, privacy and the confidentiality of the respondents and did not disclose any of their information to anyone else. The general considerations of ethics of research were adhered to.

Furthermore upon data collection, before the respondents began answering the questionnaire, the purpose of the study was clearly communicated to them, and an opportunity was given to the respondents to ask any questions pertaining to the study. It was also made clear that no respondents were forced to complete the questionnaire and that it was completely voluntary. Once the purpose of the study was communicated to the respondents, it was stated to them that all the information that was contained in the questionnaire (their responses) would remain confidential, and furthermore their personal information remained completely anonymous. Lastly, it was communicated to the respondents that the researcher was in need of their help, and their participation in the study would be greatly appreciated. The participants were allowed to stop the completion of the questionnaire at any point during data collection.

3.9 Summary

Chapter three discussed the methodological framework of the study. This entailed outlining the research design, participants, sampling procedure, data collection

procedure, research instrument used, statistical techniques used and the ethical considerations. The study hypotheses were outlined. How the population was chosen and more specifically the sampling procedure is significant in that it paved the way for the data collection technique and procedures. The psychometric properties of the SASS was also discussed to highlight the reliability and validity of the instrument being used. The statistical analyses techniques to be used to test the hypotheses were also outlined. Lastly, one of the most important and instrumental topics that was discussed was the ethical considerations. These principles of confidentiality and anonymity are at the forefront and hallmarks of any research study and should be handled with the utmost consideration.



CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the results of the data analyses based on the techniques provided in chapter three. This chapter covers the handling of the missing values, the procedure that was followed to account for lost/missing values as well as the presentation of the findings of the item analyses and relationships that were hypothesised between the latent variables. The various subscales of the SASS namely affective, behavioural, cognitive and physiological were tested for reliability using the analyse-scale-reliability-analysis function and uni-dimensionality via exploratory factor analysis (EFA) using SPSS version 23.

4.2 Missing values

Upon completion of the data collection, it was noticed that there were some missing values from various respondents' questionnaires. It is inevitable that researchers will encounter some or other missing values in their quantitative data collection. Pigott (2001) suggests that the missing values are due to the respondent's refusal to answer or overlooking of an item in the questionnaire. Research respondents may refuse or forget to answer or the data may be lost or not noted correctly. Due to time constraints and unavailability of funding, it is never a plausible or viable option to restart the data collection process. A point is reached where a decision needs to be made on how to do an analysis of the data, knowing full well that some respondents have left certain items uncompleted (Pigott, 2001). To comply with contemporary research norms and confirm that all the specific items were included in the sample and were taken into account in the analyses, the issue of missing values needed to be addressed first.

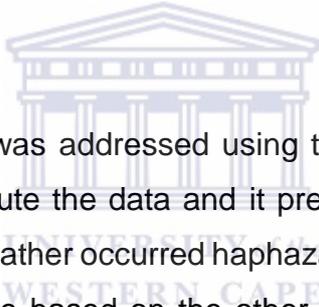
Rubin (1987) suggests rather than ascribing a single value for each missing value, that a process of multiple imputation should take place, which would substitute each value that is missing with an acceptable replacement value. It should be noted that the multiple imputation method ensures that it represents an unsystematic sample of the

missing values rather than try to assume a specific value for each of the missing values. The results of the multiple imputation indicate valid numerical inferences that appropriately shed light on the initial doubt on the values that were missing. According to Rubin (1987) there are three specific phases that involve multiple imputation:

The data that is missing are filled in m number of times to produce m number of complete sets of data.

The m sets of data are then analysed, determined by normative statistical procedures.

The findings from the m sets of data that are complete are then joined to determine the inference.



The problem of missing data was addressed using the multiple imputation method. LISREL 8.80 was used to impute the data and it presumes that the values that are missing are not systematic but rather occurred haphazardly and as a result the LISREL programme creates an average based on the other respondents' answers to those missing items.

4.3 Item analysis

The IBM SPSS Inc. (2015) statistical software was used, more specifically its reliability method was implemented on the various item scales to determine the reliability coefficients of the different scales used in the study. The objective in performing an item analysis was to identify and exclude items that were not adding to the internal consistency portrayal of the latent variables that were quantified by the scales. The Employment Equity Act 55 of 1998 states the following with regards to psychological testing:

“Psychometric testing and other similar assessments of an employee are prohibited unless the test or assessment being used has been scientifically shown to be valid

and reliable, can be applied fairly to all employees, is not biased against any employee; and has been certified by the Health Professions Council of South Africa (HPCSA) established under the Health Professions Act, 56 of 1974 or any other body which may be authorised by law to certify such tests or assessments.”(Employment Equity Act, 55 of 1998).

4.3.1 Item analysis of the Student Academic Stress Scale Questionnaire

The Student Academic Stress Scale Questionnaire (SASS) (Busari 2011) is a self-report questionnaire that initially comprised 77 items that were spread over 4 different subscales, namely Affective, Behavioural, Cognitive and Physiological. According to Busari (2011), a reliability analysis was done on the four factor structure during the questionnaire development phase by means of a “leave -one- out” technique which thus determined that the subscales would significantly increase by the removal of 27 of the items. As a result 50 items were used to quantify stress on the four subscales. Item analyses was independently done for each of the subscales.

4.3.1.1 Affective stress subscale

A Cronbach alpha score of .826 was attained for the affective subscale (see Table 4.1). This value is acceptable according to Nunnally and Bernstein’s 1994 guidelines which indicated that Cronbach alpha values above 0.70 are acceptable. The various item-total correlation scores presented in the item-total statistics table offer a suggestion of the extent to which every item compares with the total score. Field (2005) proposes that in a scale that is reliable, all the items should correlate with its total. If any of the correlations have a value of less than .30 it means that that specific item does not necessarily correlate and is not a good fit with the complete scale. In certain cases where correlations are lower than .30 the item might have to be removed (Field, 2005, Pallant, 2010). As the item-total statistics table suggests, all the amended item total correlations were above .30. As noted from the item-total-statistics, there would be no increase in the reliability coefficient if any of the items were deleted.

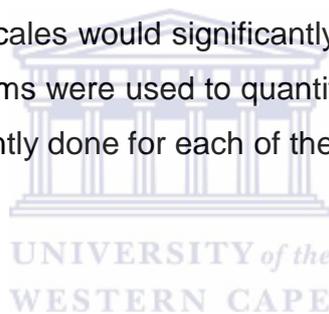


Table 4.1

The reliability analysis output for the Affective subscale

Reliability Statistics					
Cronbach's Alpha	Cronbach's Alpha	N of Items			
		Based on			
		Standardised Items			
.826	.827	13			

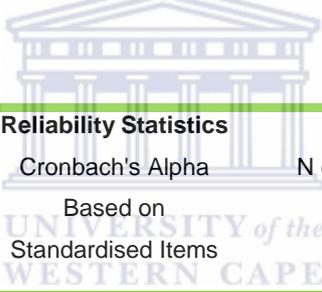
Item-Total Statistics					
Items	Scale Mean	Scale	Corrected	Squared	Cronbach's
	if Item	Variance if	Item-Total	Multiple	Alpha if Item
	Deleted	Item Deleted	Correlation	Correlation	Deleted
Q1	27.50	55.591	.508	.408	.811
Q2	27.38	57.543	.419	.388	.817
Q3	27.81	56.362	.438	.366	.816
Q4	27.96	57.783	.359	.212	.822
Q5	27.46	54.848	.551	.388	.807
Q21	27.55	54.612	.521	.392	.809
Q30	27.20	57.295	.411	.213	.818
Q31	27.73	55.512	.386	.228	.822
Q39	28.08	57.592	.413	.211	.818
Q43	27.99	56.155	.451	.433	.815
Q45	27.98	55.155	.519	.564	.810
Q46	28.03	54.188	.613	.580	.803
Q47	28.26	55.418	.503	.338	.811

4.3.1.2 Behavioural stress subscale

A high score of .877 for the internal consistency co-efficient was achieved for the behavioural sub-scale (Nunnally & Bernstein, 1994). According to Huysamen (1996), a Cronbach's alpha value of $\alpha = .85$ or higher should be used for drawing conclusions about individuals and .65 or higher when drawing conclusions about groups. According to the item total statistics the internal consistency coefficient would marginally increase from .877 to .878 if items Q12 and Q40 were excluded (see Table 4.2). The items Q12 and Q40 were not removed since the degree to which the Cronbach alpha changes would be very small.

Table 4.2

The reliability analysis output for the Behavioural subscale



Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha	N of Items
	Based on Standardised Items	
.877	.876	18

Item-Total Statistics					
Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q6	37.86	112.057	.536	.433	.869
Q7	37.86	113.244	.462	.431	.872
Q8	38.15	115.516	.413	.420	.874
Q9	38.20	110.954	.626	.544	.866
Q10	38.32	113.606	.564	.520	.869
Q12	39.44	122.079	.220	.122	.878
Q13	38.29	114.576	.549	.354	.870
Q24	38.52	113.826	.443	.245	.873
Q29	38.07	108.944	.696	.539	.863
Q33	37.87	108.772	.576	.426	.868
Q34	39.08	115.976	.387	.246	.875
Q35	38.43	111.909	.401	.298	.876
Q40	38.76	117.396	.298	.175	.878
Q41	37.77	113.409	.430	.296	.874
Q42	38.88	116.504	.358	.174	.876
Q48	38.25	108.935	.613	.546	.866
Q49	38.36	108.049	.678	.577	.864
Q50	38.38	105.907	.719	.632	.861

4.3.1.3 Cognitive stress subscale

A Cronbach Alpha of .835 was obtained for the Cognitive sub-scale, which is acceptable (Nunnally & Bernstein, 1994). All of the Corrected Item-Total Correlations are above 0.30 (Pallant, 2010) (see Table 4.3). The item total statistics suggest that if item Q36 is deleted, there would be an increase of the Cronbach alpha from .835 to .836. Due to the fact that this increase is negligible, item Q36 was not removed.

Table 4.3

The reliability analysis output for the Cognitive subscale

Reliability Statistics					
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items			
.835	.836	9			
Item-Total Statistics					
Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q19	18.28	34.459	.560	.467	.816
Q20	18.17	31.981	.658	.568	.804
Q21	18.62	33.030	.605	.496	.810
Q22	19.40	35.750	.465	.280	.826
Q23	18.55	34.531	.529	.340	.819
Q27	18.90	33.727	.615	.394	.810
Q36	19.25	34.807	.399	.215	.836
Q37	19.03	34.174	.581	.461	.814
Q38	19.03	34.894	.497	.394	.823

4.3.1.4 Physiological stress subscale

An acceptable internal consistency coefficient of $\alpha = .731$ (see Table 4.4) was obtained for the Physiological sub-scale (Nunnally & Bernstein, 1994). One of the items Q11 has a corrected item total correlation of less than .30. If we look at if the item was removed we see that the Cronbach alpha will lower from its initial $\alpha = .731$ to .730. Therefore item Q11 was not removed. The Cronbach Alpha for the Physiological subscale is at .731 unlike the Affective, Cognitive and Behavioural sub- scales which are all above .80. According to Williams (2015), the higher the internal consistency coefficient the more pronounced the correlation between the observed value and the actual value. Williams further suggests that the Cronbach's Alpha values with .80 or higher are considered "pretty good". In the Physiological sub-scale, the internal consistency co-efficient is .731, which is only slightly lower.

Table 4.4



The reliability analysis output for the Physiological subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.731	.740	10

Item-Total Statistics					
Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q11	20.33	33.280	.232	.114	.730
Q14	20.65	33.001	.408	.279	.715
Q15	20.38	31.280	.405	.314	.709
Q16	20.28	31.004	.394	.220	.710
Q17	19.72	28.863	.476	.355	.696
Q18	19.27	29.738	.362	.254	.716
Q25	19.42	29.248	.448	.262	.701
Q26	19.01	28.522	.378	.253	.716
Q28	19.78	30.764	.424	.242	.706
Q32	18.67	27.783	.457	.271	.699

4.4 Dimensional analysis of the Student Academic Stress Scale Questionnaire SASS

The following section deals with the EFA (exploratory factor analysis) findings of the SASS questionnaire. According to Massey (1971), the method of dimensionality analysis is used to decide how certain variables in the study are linked as well as for considerably decreasing the number of experimental data that needs to be collected. Massey (1971) further proposes that dimensionality analysis is based on the notion that physical amounts have proportions and that physical laws are not doctored by elements quantifying the dimensions. The significance of dimensionality analysis lies in its ability to perform research tests in the modelling process, due to its usefulness in analysing the validity of accepting or rejecting a factor. In addition, its advantageous qualities are shown by decreasing the analysis to be conducted to make further extrapolations and by refining the effectiveness of the results by means of considering changes for the parameters used to present them. Dimensional analysis allows the research to ascertain whether or not the subscale is measuring the factors as constitutively designed or defined by the original authors. During this process complex and poor items are excluded from further analysis in order to further refine the measures.

4.4.1 The dimensionality analysis of the Affective subscale

The *Affective* scale indicated a Kaiser-Meyer-Olkin measure of sampling adequacy value of .843 and the Bartlett's Test of Sphericity resulted in a score of 1144.803 ($df = 78$; Sig = 0.00) which allowed for the identity matrix null hypothesis to be rejected, indicating that factor analysis can be done (Field, 2005).

Friel (2015) suggests that Kaiser-Meyer-Olkin (KMO) values from 0.00 - 0.49 should not be factored, scores from 0.50 - 0.69 should be considered miserable, 0.60 - 0.69 to be considered mediocre, from 0.70 - 0.79 to be middling, from 0.80 - 0.89 to be meritorious and from 0.90 - 1.00 to be marvellous. As indicated the affective subscale score is .843 thus warranting a “meritorious” degree of common variance.

Various items of the Affective scale were excluded from the scale during the dimensionality analysis phase due to the items being significantly complex¹ thus affecting the Affective subscale in relation to what it was measuring. The pattern factor matrix table showed that all correlations were higher than .30 (Pallant, 2010) (see Table 4.5).

The initial EFA output indicated three factors. However, due to the exclusion of the complex items, two dominant factors emerged. The dominant theme in factor one was Affective stress relating to the lecturers' conduct while factor two was made up of affective stress relating to emotions. In terms of factor loading, all the factors loaded above 0.50 on each of the two factors.

¹ loading on two factors with the difference between the items less than 0.25 (Field, 2005)

Table 4.5

Pattern matrix for the Affective subscale

Pattern Matrix ^a		
	Factor	
	1	2
Q1	.011	.710
Q2	-.105	.680
Q3	-.062	.624
Q5	.214	.534
Q21	.129	.570
Q43	.718	-.053
Q45	.867	-.081
Q46	.799	.074
Q47	.559	.111

4.4.2 The dimensionality analysis of the Behaviour subscale

A value of .884 was attained for the Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's Test of Sphericity 1835.806 (df = 153; Sig= 0.00) which allowed for the identity matrix null hypothesis to be rejected. Furthermore, this suggests that the correlation matrix was highly factor analysable (Field, 2005).

The preliminary EFA report indicated that there were 5 factors. When the pattern matrix was completed, it still showed five dominant factors. However, removal of four complex items resulted in one uni-dimensional factor. The factor loadings of all the factors fell above and below 0.50.

The factor matrix table (see Table 4.6) showed that all of the items loaded adequately as they were not all above 0.30 (Pallant, 2010). However, seven out of the eleven items were above 0.50, thus proposing that the factor solution offers a plausible solution. Uni-dimensionality was therefore corroborated.

Table 4.6

Factor matrix for the Behaviour subscale

Factor Matrix^a	
	Factor
	1
Q13	.584
Q29	.738
Q33	.650
Q35	.443
Q41	.421
Q48	.733
Q49	.771
Q50	.802
Q42	.380
Q6	.506
Q24	.447



4.4.3 The dimensionality analysis of the Physiological subscale

The physiological subscale obtained a Kaiser-Meyer-Olkin measure of sampling adequacy of .773, and Bartlett's Test of Sphericity score of 494.560 (df =36; Sig 0.00) which allowed for the identity matrix null hypothesis to be rejected (Field, 2005). As a result the correlation matrix was factor analysable. Two of the eigenvalue scores were higher than 1. The analysis of the factor matrix were observed to be loaded on two factors, many of the factor loading were shown to be below .50. Two complex items of the sub scale were removed (Q11 and Q44). The presence of two factors indicate that the scale is multi-dimensional.

The original EFA output showed that there were two factors. The complexity of the item or lack thereof continued to show two factors in the pattern matrix. The prevailing theme in this factor was physiological stress relating to physiological symptoms (factor

1) while the second factor was connected to physiological stress from lack of confidence. The factor loadings of all the factors loaded above 0.30 on each of the factors (Pallant, 2010) (see Table 4.7).

Table 4.7

Pattern for the Physiological subscale

Pattern Matrix ^a		
	Factor	
	1	2
Q14	.558	.026
Q15	.683	-.080
Q16	.483	.070
Q17	.666	.013
Q18	.515	.016
Q25	.096	.507
Q26	-.134	.719
Q28	.060	.496
Q32	.054	.589

4.4.4 The dimensionality analysis of the Cognitive subscale

The value obtained on the Kaiser-Meyer-Olkin measure of sampling adequacy for the Cognitive sub scale was .822 and the Bartlett's Test of Sphericity 672.113 (df = 28; Sig= 0.00) indicating that factor analysis is permissible (Field, 2005). Two of the eigenvalues were shown to be higher than 1. Furthermore, one of the items was excluded (Q27) since it was a complex item. After the exclusion of Q27, the factor matrix displayed 2 factors. The predominant theme in factor one was cognitive stress relating to studying and the factor two consisted of cognitive stress relating to coping. With regards to the factor loadings all the factors loaded both below and above 0.50 on both factors (see Table 4.8).

Table 4.8
Pattern matrix for the Cognitive subscale

	Pattern Matrix ^a	
	Factor	
	1	2
Q19	-.068	-.804
Q20	.111	-.766
Q21	.080	-.710
Q22	.510	-.072
Q23	.633	-.035
Q35	.407	-.085
Q36	.598	.108
Q37	.564	-.059



4.5 Correlation

4.5.1 Age

The relationship between stress and age was examined by means of the Pearson correlation co-efficient. The Pearson correlation method was used instead of the t-test because the exact age was given and therefore age was treated as a continuous variable. The initial investigation into the Person correlation co-efficient was conducted to safeguard from any infringement of the conventions of normality, homoscedasticity and linearity. There was a significant, negative correlation between age and stress in the physiological scale, $r = -.120$, $n = 306$ $p < .05$ with higher levels of stress perceived the lower the age.

4.6 Test for difference in means

4.6.1 T-test

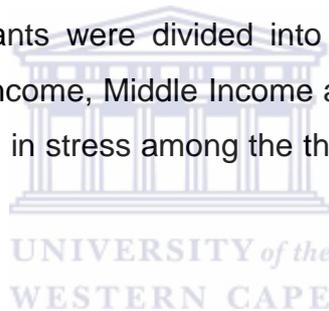
An independent-samples t-test was conducted to compare the stress scores in terms of gender. There was no significant difference in scores for male and female

participants in terms of stress: males ($M = 79.13$, $SD = 23.30$) and females ($M = 85.00$, $SD = 23.76$; $t(304) = -1.90$, $p = .06$, two-tailed).

4.6.2 ANOVA

A one-way between-groups analysis of variance was conducted to ascertain the effect of language and stress as measured by the Student Academic Stress Scale Questionnaire. There was no statistical significant difference in stress in terms of language: $F(1,10) = 0.28$; $p < 0.05$).

A one-way between-groups analysis of variance was conducted to ascertain the effect of socio economic status and stress as measured by the Student Academic stress scale Questionnaire. Participants were divided into three categories according to socio-economic status (High income, Middle Income and Low income), there was no statistical significant difference in stress among the three socio-economic groups: $F(0.906) = 0.71$; $p < 0.05$).



A one-way between-groups analysis of variance was conducted to ascertain the effect of faculty on stress as measured by the Student Academic Stress Scale Questionnaire. There was no statistical significant difference in stress among the faculty groups: $F(0.869) = 0.78$; $p < 0.05$).

4.7 Summary

This chapter was geared towards presenting the results of the statistical analysis. Item analysis as well as a dimensionality analysis was conducted in order to determine the properties of the psychometric instrument as well as eliminate or retain certain items. An independent samples t-test and ANOVA were performed in order to answer the research questions. The results are discussed in chapter five.

CHAPTER FIVE

DISCUSSION OF RESEARCH RESULTS, CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH

5.1 Introduction

The chapters preceding chapter five centred on the introduction of the research problem, the array of literature on stress models and various sources and effects of stress, particularly in a university setting. Chapter two reviews literature relating to various models of stress, the multitude of models shows compelling confirmation that much attention and curiosity and research has been invested into stress. The results were furthermore outlined in chapter four and is now being discussed in the current chapter. The purpose of the current research study was to provide an answer to the question, is there a relationship between age, gender, language, socio-economic level and faculty and stress?

The explicit aims of the research study were to determine that:

1. There are gender differences on stress perceptions among the identified student sample.
2. There is a relationship between age and stress perceptions.
3. There are no significant language differences in relation to perceived stress.
4. There are no significant differences in stress perceptions in terms of socio economic status.
5. There are no significant differences in stress in relation to faculty.

An Item analysis was performed to determine the various reliability co-efficient of the subscales, in addition to ascertain which particular items were not correlating strongly with other items in the subscale prior to the combining of items into linear complex scores in order to reflect the latent variables when fitting the suggested statistical measure to the available data. This was completed by means of the item total statistics that was presented as part of the output in chapter 4 as the reliability output available

in SPSS version 23. Items that would result in a substantial increase in the Cronbach alpha as well as those items from the research study that correlated below .30 of the total score was removed from the study (Field, 2005). Some of the items were not removed as a judgment was made to maintain as many items as was possible as the reliability coefficients were not significantly high and would thus not significantly increase in the event that the items were deleted.

After the completion of the item analyses the subscales were subjected to exploratory factor analyses to decide the uni-dimensionality of the subscales. Complex items were then removed to augment discriminant validity. Only behavioural subscales was found to be uni-dimensional (see table 4.6). The affective, physiological and cognitive subscales were all found to have two factors respectively.

5.2 Assessment of model hypotheses

Hypothesis 1: There are gender differences on stress perceptions among the identified student sample

There are no statistical significant gender differences in means in relation to stress: males ($M = 79.13$, $SD = 23.30$) and females ($M = 85.00$, $SD = 23.76$; $t(304) = -1.90$, $p = .06$, two-tailed). As a result the null hypothesis for gender and stress is accepted. Hypothesis 1 is not confirmed. This is not consistent with the study by Calvarese (2015) who reports on a study which looks at the effect of gender that more females experienced elevated levels of anxiety, frustration and depression when reacting to stress compared to males. Although a comparison of the means indicate the mean for female participants was greater than that of the male participants, it was not big enough to warrant rejecting the null hypothesis. One possible explanation for the lack of significant difference is the fact that most of the first-years are fresh from high school and share almost the same experiences with their male counterparts.

Hypothesis 2: There is a relationship between age (age was a continuous variable) and stress perceptions

The findings indicate that there is no significant relationship between age and stress ($r = -.075$, $p < 0.05$). Hypothesis 2 is not confirmed. This is not consistent with the findings by Pillay and Ngcobo (2010) and Letseka and Breier (2008) who reported that amongst first-year students there is high failure and dropout rates. As the dropout and failure rate decreases in subsequent years, it can be assumed that students' ability to deal with stress improves as they get older. This inconsistency is not surprising as most of the students are almost of the same age and hence do not differ much in terms of how they cope with stress.

Hypothesis 3: There are no significant language differences in relation to perceived stress

The intention of hypothesis 3 was to determine whether a relationship existed between stress and language. The analysis of variance (ANOVA) ($f = 1.104$, sig .277) determined that there was no significant difference between stress and language and we thus fail to reject the null hypothesis. Hypothesis 3 is therefore confirmed.

Hypothesis 4: There are no significant differences in stress perceptions in terms of socio-economic status

There are no significant differences in stress in relation to socio-economic status in means relationship between socio economic status [$F(0.906) = 0.71$; $p < 0.05$]. The null hypothesis is therefore rejected. This is surprising as research by Letseka and Breier (2008) report that the highest ranks of particular motivations for students dropping out of university was as a result of socio economic or financial limitations. This is further corroborated by Clark (2005) who reports that financial hardships was a key stressor among university students and this was predominantly found in respondents staying in poorer communities.

Hypothesis 5: There are no significant differences in stress in relation to faculty

A one-way between-groups analysis of variance was conducted to ascertain the effect of faculty on stress as measured by the Student Academic Stress Scale Questionnaire. There were no statistical significant difference in stress among the faculty groups [$F(0.869) = 0.78; p < 0.05$]. Hypothesis 5 is therefore confirmed. As a result we accept the null hypothesis. This finding is expected since the group dynamics, rules and regulations affecting the students are almost the same for all the faculties since they are at a single university mainly made up of members of the previously disadvantaged group.

5.3 Limitations of the study

Although most of the university faculties were incorporated into the study, even though in varying percentages, generalisability to the faculties not included in the study as well as towards other universities cannot be made without incorporation of respondents from other universities. The convenience sampling technique used in the current study was aimed at getting an equal sample in terms of gender, however as per the sample profile (Table 3.2) it is clear that there is a disproportionate alignment of percentages in favour of female students, future studies should keep attempt to give a better balanced gender sample.

The SASS was used by means of a convenient sample procedure on first-year university students. This particular sampling procedure was suitable in terms of collecting large amounts of data in a given setting. The drawback, however, was that the respondents were limited to those particular modules in which the SASS was used, rather than random collections of responses throughout the university which would have yielded more diverse respondents in relation to each faculty. This affects the generalisability of the results.

Although it can be seen from the sample profile that 44.4% of the respondents have English as a first language, a combination of the Afrikaans (17.6%) and Xhosa (31%)

respondents surpass the first language English respondents. The SASS was seen to be both valid and reliable in a South African setting. As a result the instrument can be seen as fair for use at the University where the English language is used as the medium of instruction. However, not having access to the SASS in other languages could have affected the students' ability to complete the questionnaire accurately. As a result, future studies using the SASS as an instrument should provide multi-lingual questionnaires.

As with any self-report measure, including the SASS, the researcher is at risk of the respondents answering the questions that make them socially desirable. This supposes that when the respondents are answering the question they try to present the answers in such a way that when the data is collected it creates a more agreeable and more easily accepting impression of them. This, no doubt, could adversely affect the result of the instrument (Holtgraves, 2004).

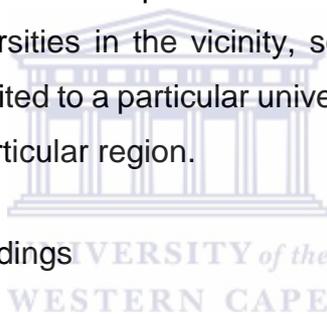
Another limitation of the study is due to its quantitative cross-sectional method of data collection rather than a longitudinal method of data collection. This could be quite important as being able to track the respondents as they further their studies to completion, and determining whether their ability to cope with stress increases and their level of stress decreases would be a significant addition to the research study. However, as limited resources and time was a major factor, this was not possible.

5.4 Suggestions for future research

Future research should include stress and its effect and impact on academic and social performance so as to gauge whether stress directly or indirectly affects students' ability to perform well on assessments and examinations. Another variable that could be included is race as well as geographical locations of the respondents to determine whether students who live in particular regions are more prone to certain stressors.

In addition future research should include the impact of the broader range of environmental and social stressors that impact on the student's day to day dealings

with stress outside of the university. The socio-economic status of the respondents were taken into account, however, it should be stressed that respondents living in impoverished conditions and coming from disadvantaged backgrounds would be assumed to live in far less favourable conditions as well have worse study locations. This is an important factor when considering in addition to the stress experienced at university what this socio-economic group has to overcome as well. More should be done to limit the effect of social desirability. In addition to requesting that respondents should answer truthfully, it should also be communicated to them why it is important to give the most accurate information i.e. so as to not skew the results, this can be reinforced by stressing the respondents' anonymity and confidentiality. The importance of increasing the sample size cannot be stressed enough so as to increase the generalisability of the study findings. The last addition that would be most welcomed to the study would be to incorporate a multi-university analysis, where the instrument is applied to universities in the vicinity, so as to determine whether the results and conclusions are limited to a particular university or whether a general trend exists in the universities in a particular region.



5.5 Practical implications of findings

The value addition the present study brings to the table is to the pertinent issue which affects all universities on a global scale i.e. high dropout and failure rates of first-year students (Letseka & Breier, 2008). From the results, there are no significant relationships and differences in means that exists between age, gender, faculty and stress. The university through its support services may, therefore offer stress management support without necessarily worrying as to whether or not they should have gender-specific, age-specific; language-specific or faculty specific interventions. As a practical implementation in future, students who are fresh matriculants in first-year and would therefore be younger, could attend inclusive stress management classes with senior students and other students from different socio-economic backgrounds. Here they will learn the strategies that students who are older and in second, third and post-graduate level use to overcome obstacles and stress impediments. Kausar (2010) underscored the importance of counselling in universities which could even lead to improvement in academic performance.

As there were no significant relationships reported, future research should replicate the study to see if similar results will be found. In the current sample, there was a disproportion with regards to gender as well as faculty categories. In future research, an effort should be made to get a more equitable ratio of demographics. The implementation of a rigid mentorship programme which allows new entrants into the university to regularly discuss their experiences with students who are furthering their studies to engage and unpack their time spent at university and to have a dialogue between these parties would be a welcome addition to the university.

5.6 Conclusion

No significant differences were found between gender, socio-economic status, language, faculty and stress. The relationship between age and stress was found to be not significant. This is of particular importance for current and future studies due to the fact that it is still a prominent topic that continues to affect individuals and the higher institutions of learning. The recent financial crisis that has befallen South African universities is symptomatic of the dissatisfaction students have towards the current tertiary education system and is compounded by the financial stress that accompanies registration, course and housing costs.

The motivation for exploring this research topic was to uncover the harsh realities that await students entering university. The dropout and failure rate that seems almost predictable each year and the ability to share, teach and learn ways in which students can cope with these harsh realities, and as a result better deal with stress earlier on, thus halting the impending failure and dropout rates. The aspirations of the research study is to practically address and furthermore, add to the existing body of knowledge and seek to align itself with humanity's unwavering capacity to answer questions that pose a threat to its advancement. The application of the study in future research is to incorporate methodologies to cope with basic forms of stress that is generally encountered by students entering university.

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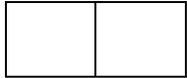
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APPENDIX A

Letter to participants



For office use only



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INFORMATION SHEET AND CONSENT FORM

I, Ebrahim Adams, an Industrial Psychology Masters student from the University of the Western Cape, am conducting a research project on stress amongst first year university students. The aim of the study is to investigate first year university students' perception of stress. Within this process the study aims to elucidate the meanings first year university students attach to stress and stress related issues and how these meanings and perceptions contribute towards lessening stress amongst them.

Title of Research Project: Stress amongst first year university students

The study has been described to me in language that I understand and I freely and voluntarily agree to participate. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

Participants' signature.....

Date.....

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

Study Coordinator's Name: Ebrahim Adams

Email: 2449851@uwc.ac.za

Cell:



APPENDIX B

Biographical Information and Student Academic Stress Scale Questionnaire

BIOGRAPHICAL INFORMATION

AGE:

Please mark an X in the appropriate box.

GENDER:

Male		Female	
------	--	--------	--



HOME LANGUAGE:

English		Afrikaans		Xhosa		Zulu		Other	
---------	--	-----------	--	-------	--	------	--	-------	--

SOCIO-ECONOMIC STATUS

High-Income		Middle- Income		Low-Income	
-------------	--	----------------	--	------------	--

WORK

Part-Time		Full-Time	
-----------	--	-----------	--

FACULTY

Arts		CHS	
Dentistry		EMS	
Education		Law	
Natural Science			



STUDENT ACADEMIC STRESS SCALE QUESTIONNAIRE

- Please take the time to complete this questionnaire.
- Please indicate your answer by marking an **X** in the appropriate box.

EXPERIENCES OF UNIVERSITY

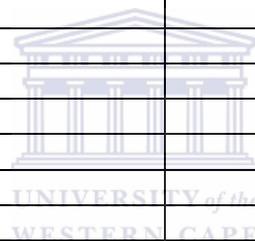
This questionnaire contains questions on feelings that you perhaps experience during university and in your life.

Use this scale to answer each of the questions.

- 1 = None of the time
- 2 = A little of the time
- 3 = Some of the time
- 4 = Most of the time
- 5 = All of the time



	88	(1)None of the Time	(2)A Little of the Time	(3)Some of the Time	(4)Most of the Time	(5)All of the Time
1. My work built up so much that I feel like crying						
2. I feel emotional						
3. My emotions stop me from studying						
4. I yelled at family or friends						
5. I feel emotionally drained by the academic institution						
6. I feel I was lazy when it came to academic work						
7. I procrastinated on assignments						
8. I am distracted in class						
		(1)None of the Time	(2)A Little of the Time	(3)Some of the Time	(4)Most of the Time	(5)All of the Time
9. I am unable to study as required						
10. I have trouble concentrating in class						
11. I try to avoid class if possible						
12. I use alcohol or drugs to enable me to study well						
13. I have trouble remembering my notes						
14. I couldn't breathe						
15. I have difficulty eating						
16. My hands are sweaty						
17. I have a lot of trouble sleeping						
18. I have headaches						
19. I feel overwhelmed by the demands of studying						
20. I feel worried about coping with my studies						
21. There is so much going on that I can't think straight						
22. I miss too many of my lectures						
23. I don't spend enough time studying						
24. I am not really sure I am interested in reading						
25. At times am unable to express myself in words						
26. I am afraid to speak or discuss in the lecture room						
27. I feel the academic programme is too cumbersome for me						
28. I can't keep my mind on my studies						
29. I have trouble studying effectively						
30. At times I don't feel like studying						



31. I feel I read to slow compared to others					
32. I worry too much about the marks to obtain in my examination					
33. I feel I am getting low marks					
34. I would like to stop going to campus					
35. I have no stable place to study					
	(1)None of the Time	(2)A Little of the Time	(3)Some of the Time	(4)Most of the Time	(5)All of the Time
36. I don't really like my course of study					
37. I feel some textbooks are too hard for me to understand					
38. I feel some lectures are too hard for me to understand					
39. I feel so much restlessness while receiving lectures					
40. There are not enough good books in the library					
41. Too much work is required in some courses					
42. I feel I am not getting along with some lecturers					
43. I feel some lecturers lack interest in their students					
44. Some courses are too dull and boring					
45. Some lecturers are not friendly to students					
46. I feel lecturers are not considerate of students' feelings					
47. Some lecturers give unfair tests to students					
48. I feel I have a poor memory					
49. I have trouble making up my mind about my academic work					
50. I am too forgetful and easily discouraged about academic work					

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE
YOUR PARTICIPATION IS GREATLY APPRECIATED**