

ACADEMIC STRESS AND ALCOHOL USE AMONG SECOND YEAR UNIVERSITY STUDENTS

**ACADEMIC STRESS AND ALCOHOL USE AMONG SECOND YEAR  
UNIVERSITY STUDENTS**

by

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**DECLARATION**

I understand what plagiarism is and am aware of university policy and implications in this regard. I declare that the mini-dissertation hereby submitted to the University of Pretoria, for the degree of Masters in Clinical Psychology is my own original work. I have not used work previously produced by another student or any other person to hand in as my own. Where secondary material is used, this has been carefully acknowledged and referenced in accordance with university requirements.

C. E. McConnachie

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**Initials & Surname**

**Date**

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**ABSTRACT**

*Objective:* Academic stress and alcohol use accompany the transition from secondary to tertiary education for some university students and are associated with a variety of negative outcomes. Although a dearth of research exists on academic stress and alcohol use, independent of one another, there appears to be limited research into the association between academic stress and alcohol use in university students within the South African context. The current research investigates the relationship between academic stress and alcohol use in second year university students reporting on their first year experiences.

*Methodology:* Second year university students (n = 81) from the Faculty of Humanities of a prominent Gauteng university were surveyed. The students reported their experiences of stress (academic and perceived stress) and alcohol use, based on their first year experiences, through the following measures: the Academic Stress Scale (ASS), the Perceived Stress Scale (PSS) and the Alcohol Use Disorder Identification Test (AUDIT).

*Results:* The sample reported moderate levels of academic stress and perceived stress, and fairly low levels of alcohol use. Neither academic stress nor perceived stress were found to have a significant relationship with alcohol use. Results did not support the findings from past research of a relationship between academic stress and alcohol use among a sample of university students. However, differing degrees of academic stress and patterns of alcohol use were identified based on the demographic characteristics of the population – gender, race and place of residence.

*Conclusion:* Despite the small sample size obtained and the delineation from literature reviewed, the research allowed for a number of relevant hypotheses to be posed and explored by future research endeavours.

## ACADEMIC STRESS AND ALCOHOL USE AMONG SECOND YEAR UNIVERSITY STUDENTS

**Keywords:** Academic stress; perceived stress; alcohol use; second year students; South Africa

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**ABBREVIATIONS**

ASS : Academic Stress Scale

PSS : Perceived Stress Scale

AUDIT : Alcohol Use Disorder Identification Test

TRT : Tension-Reduction Theory

SPSS : Statistical Package of the Social Sciences

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1. Introduction**

Many students entering into tertiary education are not equipped with the social and psychological resources needed to navigate the context of university life, which can be experienced as either adventurous or overwhelming (Huon & Sankey, 2002; Towbes & Cohen, 1996). The opportunity for growth offered with the transition from secondary to tertiary education, is often accompanied by increased exposure to stressful situations – personal and academic (Fisher, 1994; Andrews & Wilding, 2002). The association between stress and alcohol use has been a topic of debate as a number of theories have sought to explain the relationship such as Lazarus and Folkman’s (1984) transactional theory, and the tension reduction theory as posed by Conger (1956). Several studies have shown that both an individual’s experience of stress and levels of alcohol consumption increase following the transition to university (Renk & Smith, 2007; Hicks & Heastie, 2008; Pederson, 2012; Welle & Graf, 2011; Lategan, du Preez & Pentz, 2017). The following chapter will explain the importance of identifying possible relationships between stress and alcohol use among students within the university context. The chapter will conclude by bringing to light the value offered by the current study, defining key concepts and providing an overview of the chapters to follow.

#### **1.1. Statement of the problem**

Understanding stress and the events that lead to its manifestation have remained at the forefront of research, undertaken in both the academic and social context (Prabu, 2015; Hamdan-Mansour & Dawani, 2008). Scholars from the field of behavioural science have conducted studies on stress and its impact on the individual; and have found that individuals’

perceptions, experiences and responses to stressful situations differ greatly (Calvarese, 2015; Addis & Mahalik, 2003). Resultantly, more attention toward stress research has been proposed (Ongori & Agolla, 2008; Agolla, 2009). Within the academically oriented context of tertiary education, stress has been found to have either a positive or a negative bearing on an individual (Smith, 2002; Stevenson & Harper, 2006). Tertiary level institutions differ from secondary level institutions in terms of the expectations placed on the individual and what is considered appropriate behaviour; as such, the causes of stress and the manifestation of symptoms vary (Chang & Lu, 2007). Studies on stress among student populations have suggested that students' attempts to navigate and manage their interactions within the complex university environment impacts on their overall well-being (Danna & Griffin, 1999; Ongori, 2008) and functioning (Pederson, 2012; Mudhovozi, 2012).

The use of alcohol as a form of stress management has been well documented in the literature (Sayette, 1999; Chalder, Elgar & Bernet, 2006; Welle & Graf, 2011). However, the nature of the relationship between alcohol use and stress reduction is complex (Sayette, 1999; Conger, 1956). Alcohol has sedative and depressant-like properties that have an impact on the user's state of mind and can lead to short-term positive feelings and relaxation (Anthenelli, 2012). A number of people, including university students, make use of alcohol as a means of dealing with stress (Smith & Randall, 2012; Keyes, Hatzenbuehler, Grant & Hasin, 2012). However, increased levels of alcohol use have been found to place an individual's body under both physiological and psychological strain; which, conversely, serves to compound the effects of stress (Keyes et al., 2012).

In spite of the often negative outcomes of alcohol use, the expected stress-relieving effect of alcohol has been a consistent topic of study, as researchers have considered stress

reduction to be one of the primary motivations in relation to consumption of alcohol (Backer-Fulghum, Patock-Peckham, King, Roufa, & Hage, 2012). Identified as a vulnerable population susceptible to high levels of academic stress with limited resources available to manage the stress (von Oncuil, 1996; Dhakal, 2013; Nandamuri & Gowthami, 2011), first year university students are considered the population most prevalent to heavy drinking behaviour (Muthén & Muthén, 2000; Peltzer, Davids & Njuho, 2011). However, it is an individual's perception and experience of a stressor and the availability of resources that governs the coping style employed (Renk & Smith, 2007; Hicks & Heastie, 2008). In some instances, students seek to remove stress related symptoms through the use of alcohol and other substances (Welle & Graf, 2011). Therefore, the current study focused on identifying the presence of a relationship between academic stress experienced in university students and alcohol use.

## **1.2. Aim of the study**

The study investigated the association between academic stress and alcohol use as reported by students in their second year about their first year experiences.

## **1.3. Objectives of the study**

- 1.3.1. To determine if there is a relationship between academic stress and alcohol use.
- 1.3.2. To examine whether experiences of academic stress and the level of alcohol use differ on the basis of gender, ethnicity and place of residence.

## **1.4. Research questions**

- 1.4.1. Is there an association between academic stress and alcohol use among university students?

1.4.2. Will gender, ethnicity or place of residence influence university students' experiences of academic stress and level of alcohol use?

## **1.5. Operational definitions of terms**

### **1.5.1. Stress**

Stress is considered a normal reaction that forms a part of everyday life (Smith & Randall, 2012). Experienced as either a positive force or an interfering factor, stress can benefit an individual's health and performance or reduce it. (Nandamuri & Gowthami, 2011). Within the current study, stress has been defined as the degree to which individuals appraise situations and conditions, relevant to their context, as stressful (Lee, 2012).

### **1.5.2. Stress management**

Stress management, or coping with stress, is the process of utilising one's psychological and physical resources as a means of controlling or reducing tension that may arise when overwhelmed by tasks, difficulties and responsibilities (Tesfai, 2016).

### **1.5.3. Academic stress**

Academic stress is the result of a number of academic-related demands and pressures that exceed the adaptive, social and psychological resources available to an individual (Wilks, 2008).

### **1.5.4. Alcohol use**

Alcohol use has been used to describe both the frequency and quantity of alcohol consumed over time. Frequency refers to the number of days or occasions during which time

alcohol is consumed. Quantity, on the other hand, is the amount consumed on each drinking occasion (World Health Organisation [WHO], 2009).

### **1.5.5. Transitional life period**

An individual's life course runs on a continuum characterised by transitions between significant periods, where each period has a unique impact on the whole (Levinson, 1986). As such, the transitional period to tertiary education and the years spent at university are considered a major life event irrespective of age, gender and race (Towbes & Cohen, 1996).

## **1.6. Significance of the study**

### **1.6.1. Stress in the student population**

A number of international and local studies (Higher Education Research Institute, 2013; Smit, Pretorius & Joubert, 2009; Kyei & Ramagona, 2013) have explored undergraduate university students' experiences of tertiary education. Studies noted that students experienced difficulties in various areas of the university context often associated with academic demands (Huynh & Fuligini, 2012), such as: developing effective study methods, adjusting to new coursework requirements and managing the distribution of their time and resources appropriately. When faced with stressful situations many undergraduate university students, particularly first year students, are unable to effectively cope and adjust to the demands of university life (Towbes & Cohen, 1996; Awang, Kutty & Ahmad, 2014; Wei, Russel & Zakalik, 2005), due to a lack of adequate psychological resources and life experience (Jackson & Finney, 2002).

Despite the challenges students face concerning academic and social related pressures, a number of support systems that form part of the university context are available (Moscaritolo

& Schreiber, 2014; Speckman & Mandew, 2014). Within a majority of the tertiary institutions in South Africa, support is offered to students regarding general health and well-being (Nyar, 2014; Luescher, 2018). At the university where the current study was conducted, the 'Student Counselling Division' offers psychological intervention and guidance to students in need. In the university context, academic support ensures that students are guided toward fitting career choices, assisted in handling academic stress more effectively and becoming better equipped to achieve academically (Belloc, Maruotti & Petrella, 2010; Choudhry, Gujjar & Hafeez, 2008).

Stress, specifically academic stress, has been found to have a noticeable presence throughout the duration of a student's tenure at university (Chemers, Hu & Garcia, 2001; Welle & Graf, 2011). Research has shown that a student's experiences of academic stress can be influenced by a diverse array of factors and, as such, stress related symptoms and an individual's response to stress could manifest itself differently between persons (Renk & Smith, 2007; Hicks & Heastie, 2008). However, some studies have reported that a portion of the student population may seek to alleviate stress related symptoms through the use of alcohol and other substances (Welle & Graf, 2011).

### **1.6.2. Alcohol use trends**

In comparison to other African countries, South Africa is considered among the highest for alcohol use, with a total adult per capita consumption of 9.5 litres of pure alcohol per annum (WHO, 2014). A significant portion of those individuals drinking alcohol in South Africa meet the criteria for hazardous or harmful alcohol use. Despite policies and regulations put in place by South African legislation, the National Liquor Policy of the Liquor Act, 59 of 2003, alcohol abuse continues to increase exponentially (Department of Trade and Industry, 2015). As a

result of the aforementioned increase, changes in policy have been warranted at varying levels and, as such, a change in the legal drinking age, from 18 to 21, has been proposed. However, following amendments to the National Liquor Policy in August 2016, the proposed age changes were not enforced and remained under deliberation (Department of Trade and Industry, 2016). The elected university's policy on alcohol use, as per the rules and regulations identified within the university residences' guidelines, have been aligned with those of the South African legislation. By aligning with South African legislation, the university has allowed for the endorsement of responsible alcohol use and encourages safer, low risk choices where alcohol consumption is concerned. The provisions of the Liquor Act, 59 of 2003, although part of legislation, are at times difficult to enforce and to regulate effectively (Department of Trade and Industry, 2015).

International studies have identified early adulthood, between ages of 18 and 25 years, as both a period of increased alcohol use (Johnston & O'Malley, 1986; Muthén & Muthén, 2000; Kuntsche, Rehm & Gmel, 2004) and a period of vulnerability, as individuals mature from adolescence into adulthood, and some make the transition from secondary to tertiary education (Jackson & Finney, 2002). Thus, university culture has been identified as one in which the perceptions of alcohol use have been normalized and are, to some extent, encouraged among different peer groups in the population of university students (Ham & Hope, 2003). As such, alcohol is considered to be an expected part of the university experience and is something that a number of undergraduate university students grapple with (Bosari & Carey, 2006).

### **1.6.3. Alcohol use in the student population**

Within the university context, harmful and heavy episodic drinking in the form of 'binges' and drinking to intoxication has become a recent concern (WHO, 2014). In accordance



with a publication by the WHO (2014) on prevalence rates of heavy episodic drinking in South Africa, it was identified that 10.4% of the population (aged 15 years and older) engage in heavy episodic drinking. A study conducted on drinking behaviour among both undergraduate and postgraduate students in South Africa found that 18.78% of the sample indicated patterns of binge drinking (du Preez, Pentz & Lategan, 2016). Thus, the percentage of students engaging in binge drinking behaviour is high considering the percentage of the general population who engage in similar behaviour.

The notion that alcohol can be used as a means to relieve symptoms of stress is one that continues to be widely held across cultures (Unger et al., 2001; Conger, 1956; Cooper, Russell, Skinner, Frone & Mudar, 1992). According to Unger et al. (2001), alcohol use in individuals has been associated with perceived stress and stressful life events. For university students, especially first year students, the transition to tertiary education is considered a major life event, which often involves leaving the safety and supervision of the home environment (Pengpid, Peltzer, van der Heever & Skaal, 2013). The experience of freedom along with a new-found sense of autonomy may be exciting for some and overwhelming for others (Chemers, et al., 2001); as new and previously prohibited experiences are normalised as part of the university culture. Thus, a varied pattern of alcohol use is considered characteristic of undergraduate students and has been identified as a cause for concern (Bosari & Carey, 2006).

To summarise, entering into tertiary education has been associated with meaningful personal, social and academic experiences. Although identified as an exciting and adventurous period for some (Huon & Sankey, 2002), the transition to university life can be experienced as overwhelming, isolating and stressful for others (Andrews & Wilding, 2002); as it sees the individual move from a dependent position toward one of independence. It is during the

transitional period that students demonstrate an increase in alcohol use. Studies have identified early adulthood as the most prevalent age bracket for increased alcohol use and heavy drinking behaviour. Coupled with the lack of adequate psychological resources, maturity and life experiences, undergraduate university students are at risk of experiencing high levels of academic stress and alcohol use in comparison to individuals not attending university (Muthén & Muthén, 2000).

In order to further understand the impact the transitional period has on university students' overall functioning, research in the area of academic stress and alcohol use is important. Furthermore, despite numerous studies, both international and local, having been conducted on academic stress and alcohol use, independent of one another; a limited number of studies pertaining to the relationship between academic stress and alcohol use – particularly within the South African context – were available. As such, the present study investigated the association between academic stress and alcohol use as reported by second year university students who reported on the experiences of their first year of study.

## **1.7. Thesis structure**

### Chapter 1: Introduction

The current chapter describes the setting of the study; defines the research problem, outlines the research questions and goals of the study, and states the various motivational factors for the completion of the study.

### Chapter 2: Literature review

In the literature review, the body of literature surrounding the understanding of first year university students and their experiences of stress, with a focus on academic stress, as well as

their use of alcohol as a means to overcome academic stress, was reviewed. The chapter is comprised of an overview of current and past research that is relevant to the topic at hand.

### Chapter 3: Methodology

The chapter outlines the methodology employed in the study. The chapter justifies the paradigmatic stance of the current study; describes the participant group, details the research process that ensued, clarifies how the quality of the study was maintained, and finally, explains how the ethical considerations were addressed.

### Chapter 4: Results

The chapter presents the statistical results obtained from the data gathered and analyses performed. The most relevant data will be presented by means of tables, graphs and figures. It must be noted that the results chapter does not include the interpretation of the results.

### Chapter 5: Discussion

The chapter focuses on a discussion of the research findings and how certain aspects could have been performed or approached differently. In doing so, the researcher provides not only an integration of theory and results, but also recommendations for future research with regards to identified areas that need more focus, as well as the limitations that were encountered during the research process.

## **1.8. Conclusion**

The current chapter outlined the research questions, aim and objectives of the study and further introduced and defined relevant terms of the study. The chapter was concluded by providing a synopsis of the chapters that will follow.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1. Stress and coping

Stress is when one feels overwhelmed by stimuli in the environment. Any stimuli that results in challenges and threatens a person's well-being can be regarded a stress. Some situations that stress a person can be positive, for instance stress before exams may result in students studying and working harder, to attain good grades (Fairbrother & Warn, 2003; Prabu, 2015). However, when stresses impair physical and mental health it can lead to negative outcomes (Yorgason, Linville & Zitzman, 2008; Goh & Agius, 2010). For instance, some stresses can result in situations that cause one to experience tension or negative emotions, like anxiety and depression. Thus, stress is a feeling experienced when one is overwhelmed or under pressure (Bernstein, Penner, Stewart & Roy, 2008; Prabu, 2015).

Circumstances or events in the environment that disrupt an individual's daily functioning are referred to as stressors (Bernstein et al., 2008; Huli, 2014). Stressors can range from cataclysmic events such as the death of a loved one to daily hassles such as conflict with family members (Dwyer & Cummings, 2001). Stressors are interpreted in various ways and may imply different things to different individuals depending on the context of the stress (Bernstein et al., 2008; Damodaran & Paul, 2016). Each individual's response to a stressor is unique and is dependent on how the individual interprets an event and by the extent and severity of the stressor (Hamdan-Mansour & Dawani, 2008). The transactional theory identifies both cognitive appraisal and coping, as being critical mediators of stressful person-environment relationships and their overall, long-term outcomes (Folkman, Lazarus, Gruen & DeLongis,

1986). Cognitive appraisal is a process through which an individual evaluates the extent to which a confrontational engagement with the environment is pertinent to his or her well-being and, if so, in what way. Thus, cognitive appraisal is considered a sequential process that begins with a primary appraisal<sup>1</sup> (what is at stake) followed by a secondary appraisal<sup>2</sup> (what can be done), which often gives way to more effective decision-making and more adaptive coping (Duhachek & Kelting, 2009; Miller & McCool, 2003). In other words, the way in which the individual thinks about the situation will determine how the individual responds and manages stress (Hassanbeigi, Askari, Hassanbeigi & Pourmovahed, 2013; Prabu, 2015).

Coping<sup>3</sup>, on the other hand, has two major strategies (Folkman et al., 1986): problem-focused coping, which is aimed at actively managing the problem situation; and emotion-focused coping, which seeks to resolve the emotional distress evoked by the problem situation (Pienaar, 2002). Thus, when a stressor is appraised as falling within an individual's limit of control, adopting a more problem-focused coping strategy is considered the most effective means of resolving one's stress. Conversely, when a stressor is assessed as uncontrollable, engaging a more emotion-focused coping strategy is considered the most efficient way in which to resolve stress (Duhachek & Kelting, 2009). As per the transactional theory, the type of coping strategy employed by an individual varies depending on what is assessed to be at stake for 'that' individual and what coping strategies are available to him or her (Folkman et al., 1986). Lazarus and Folkman (1984) acknowledged that both problem-focused and emotion-

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<sup>1</sup> In primary appraisal, the individual assesses the impact a confrontational encounter may have on his or her adaptive resources; whereby, an individual's experience of stress is considered a consequence of an encounter that was assessed to have negative implications (Duhachek & Kelting, 2009). Thus, primary appraisal is "the judgment that an encounter is irrelevant, benign-positive, or stressful" (Miller & McCool, 2003).

<sup>2</sup> In secondary appraisal, the individual evaluates the availability of the necessary resources needed to overcome or prevent harm or to improve the possibility of potential gain (Duhachek & Kelting, 2009). A diverse range of context specific coping strategies are appraised, such as changing the situation, accepting it, trying to understand the situation, or withdrawing from impulsive behaviour (Folkman et al., 1986).

<sup>3</sup> Coping refers the individual's cognitive and behavioural efforts to overcome (reduce, minimize, master, or tolerate) the pressures of the person-environment interaction that are evaluated as exceeding the individual's available adaptive resources (Folkman et al., 1986).

focused coping strategies are employed concurrently in most observed cases. Thus, based on the individual's unique experiences, coping can have either a positive or negative impact on an individual's overall well-being. However, more recent research has posited a third coping style, namely denial or avoidant coping (Lenz, 2010; Carver, Scheier & Weintraub, 1989).

Avoidant coping strategies manifest as a means through which individuals seek to navigate their inability to confront stressful life events or the perceived emotional disruptions accompanying said life events (Lenz, 2010). The avoidant coping style, also referred to as disengagement, has been defined as the behavioural or mental detachment from the stress inducing situation (Carver et al., 1989). Thus, the avoidant coping style involves a diminished need to either modify or adapt to the stressful situation and can extend as far as altering one's thought processes as a means of avoiding the situation altogether (Carver et al., 1989).

Although often criticized for being a dysfunctional way of coping, mental disengagement, as explained by Folkman and Moskowitz (2004), may be an effective measure when used appropriately in situations where some individuals experience a complete lack of control over the desired outcome. Therefore, by distancing oneself from the stressful situation, the individual is able to minimize some of the pressure and stress in an effective manner. For example, distancing oneself from the university context while waiting for exam results by going home. However, one such method of disengagement employed by university students in a maladaptive manner involves the use of substances, particularly alcohol (Carver et al., 1989). It is with this understanding that the present research focussed on alcohol use within a South African university sample of second year students in relation to academic stress experienced in their first year of university. However, before exploring the relationship between academic

stress and alcohol use among university students, an understanding of the literature surrounding the stressors that university students are exposed to is necessary.

### **2.1.1. Differences in stress and coping between genders**

Literature pertaining to the relationship between gender and stress has produced inconsistent results; however, numerous studies have corroborated the finding that females experience more stress than males (Matud, 2004; Cohen & Janicki-Deverts, 2012). Furthermore, Matud (2004) and Calvarese (2015) corroborate the finding that more females present with signs of chronic stress compared to males, and that the most prominent type of stress was related to the individual's daily routine and functioning. However, various studies have found that males and females are subject to different forms of stress (Calvarese, 2015) and that role expectancy impacts on an individual's response to stress, as well as the impact that cultural norms have on overall stress management (Efthim, Kenny & Mahalik, 2001; Eisler & Blalock, 1991). The way in which gender roles impede an individual's experiences and responses to stress can have negative consequences (Calvarese, 2015; Addis & Mahalik, 2003). Eisler, Skidmore and West (1988) maintained that gender norms impact on males to a greater extent than on females, as adherence to gender norms were said to result in feelings of anger and poor health decisions, and, as such, male responses to stress have been linked to instances of aggression and violence (Jakupak, Lisak & Roemer, 2002; Cohen & Zeichner, 2006). Stress in females with regard to gender norms, has been linked to problems associated with body image and eating disorders (Martz, Handley & Eisler, 1995).

Thus, notable differences have been found between male and female experiences of stress, with females being found to experience a greater degree of anxiety, frustration and depression in response to stress compared to their male counterparts (Calvarese, 2015; Misra

& Castillo, 2004; Gyawali, 2013). In order to investigate variances in the coping mechanisms employed by males and females an assessment measure was designed that reviewed both active/passive coping strategies and prosocial/antisocial coping strategies (Hobfall, Dunchoo, Ben-Porath & Mannier, 1994). Hobfall et al. (1994) suggested that traditional male problem-solving strategies had a propensity for being more passive-aggressive and aggressive, falling within the avoidant/antisocial coping styles. Females, on the other hand, were noted to exhibit more prosocial coping strategies when faced with stressful situations (Hobfall et al., 1994; Calvarese, 2015). In terms of Lazarus and Folkman's (1984) understanding of stress and coping by way of the transactional theory, males have been identified as utilizing a more problem-focused and avoidant (Lenz, 2010) coping strategy, whilst females have a tendency to engage in more emotion focused strategies (Bouchard & Shih, 2013; Lindsey et al., 2011).

### **2.1.2. Differences in stress and coping between race groups**

International studies have shown that culture and an individual's social and support networks influence their experiences of stress in a variety of different situations (Mossakowski, 2003; Noh, Beiser, Kasper, Hou & Rummens, 1999). However, there appears to be limited literature pertaining to stress and race within the South African context, especially in terms of academic stress and the student population. The South African Stress and Health Survey conducted between 2002 and 2004 was the only large scale and nationally representative study in democratic South Africa (Jackson et al, 2010). The study sampled 4,381 adults of all race groups and ethnicities across South Africa. The South African Stress and Health Survey gathered data from participants on the following areas: negative life events, relationship stress, domestic violence, social strain and early-life stress (Jackson et al., 2010). The study identified the African population as having been exposed to the most stressful life events, followed by the Coloured population, then the Indian population, with the White population identified as



having experienced the fewest stressful life events (Seedat et al., 2009). Despite having provided an understanding of the experiences of stress among the different races and ethnic groups in the South African context, one needs to remain cognisant of the fact that the conclusions were drawn from data that is considered dated.

Seedat et al. (2009) noted that stress in the South African context has been found to be associated with socioeconomic status; whereby, an individual's socioeconomic status was found to have a relation to their experience of negative life events and their access to or availability of adaptive/appropriate coping strategies and resources. Thus, it was noted that an increase in the socioeconomic status of an individual would result in a decline in the individual's experiences of negative life events and would also see a rise in the availability of adaptive resources necessary for the management of stressful situations (Seedat et al., 2009).

## **2.2. Stress and university students**

In an annual survey of first year university students conducted by the Higher Education Research Institute (2013), it was noted that students experienced difficulties in a number of areas related to the university context, such as: developing effective study regimes, adapting to the requirements of new coursework, and managing the distribution of their time and resources appropriately. Thus, stress has been found to have a noticeable presence throughout a student's tenure at university (Chemers et al., 2001; Welle & Graf, 2011). As such, a lot of attention has been directed toward student stress research; however, research into student stress has focused on those students from certain fields of study, namely medicine, psychology and nursing (Alzaeem, Sulmaman & Gillani, 2010); with little consideration to other fields of study offered by tertiary institutions.

### **2.2.1. The transitional period and its impact on university students**

The transition to university is considered a major life event that includes, but is not limited to, various social and educational opportunities becoming available to the individual and has been identified as a period in the individual's life associated with increased levels of stress (Fisher, 1994; Morton, Mergler & Boman, 2014). Frequently identified in research as causes of stress in first year university students are the institutional and academic demands placed on them, coupled with the need to learn new study methods and to manage financial strains as they may arise, all the while having to adjust to life away from the safety offered by a secure home environment (Fisher, 1994). Notably, the transition to university and the stressors that accompany such a transition have been found to produce increased levels of anxiety and distress in a significant portion of students.

Studies focusing on the transitional period from secondary to tertiary education have identified the first year student population as being more susceptible to higher levels of stress and psychotic symptoms than those students continuing their studies – second year and above (Fisher & Hood, 1987; Adlaf, Gliksman, Demers & Newton-Taylor, 2001; Andrews & Wilding, 2004; Wong, Cheung, Chan, Ma & Tang, 2006). Similarly, Jackson and Finney (2002) investigated university related stressors and identified younger students from the first year population as being more vulnerable to stressful situations compared to older students in different years of study. Thus, it was noted that those students having recently transitioned to tertiary education did not possess the adequate psychological resources, level of maturity and experiences, needed to manage exposure to the stressors of a university environment (Jackson & Finney, 2002; Towbes & Cohen, 1996; Morton et al., 2014).

Considering the aforementioned, a large portion of first year university students are able to manage appropriately the transitional period into university life. However, some

students struggle to find a balance between a newly acquired sense of autonomy and the academic and social demands characteristic of the university context (Chemers et al., 2001; Huynh & Fuligini, 2012). In an attempt to understand the complexities of the transition faced by first year university students, Chickering and Reisser (1993) developed the theory of student development. The theory of student development emphasized that during the transitional period a student progresses from adolescence to adulthood (Chickering & Reisser, 1993); a process in which the individual moves from a dependent position, having been reliant on the family system to meet their needs – safety, security and emotional support – to a more independent position, where support is found in peer relationships and institutional systems (Bland, Melton, Welle & Bigham, 2012). Although some first year students welcome the sense of autonomy, others experience an amplified sense of anxiety (Hicks & Miller, 2006; Dyson & Renk, 2006; Huon & Sankey, 2002).

### **2.2.2. Gender differences in experiences of university related stress**

Males and females experience, perceive and respond to stressful life events differently (Baker, 2003; Lee, Keough & Sexton, 2002; Burke & Weir, 1978). Past research shows that in comparison to male university students, females reported feeling more stress in a number of stressful situations, experiencing higher levels of frustration, self-inflicted stress and academic related pressures (Abouserie, 1994; Dusselier, Dunn, Wang, Shelly II & Whalen, 2005; Pierceall & Keim, 2007; Soderstrom, Dolbier, Lieferman & Steinhardt, 2000; Stanton, Kirk, Cameron & Danoff-Burg, 2000). Various studies have been conducted on how university students perceive and respond to stress, i.e. the coping strategies employed (Baker, 2003; Dyson & Renk, 2006; Brougham, Zail, Mendoza & Miller, 2009). A number of studies (Blanchard-Fields, Sulsky & Robinson-Whelen, 1991; Lee et al., 2002) identified that female university students make use of emotion-focused coping strategies to a greater extent than male

students. As such, female students make use of the appropriate expression of feelings and emotions, seeking out support from others, and both the acceptance of and the positive reframing of the situation (Eaton & Bradley, 2008; Ptacek, Smith & Dodge, 1994; Misra, McKean, West & Russo, 2000). Male university students, on the other hand, although having been found to use problem-focused coping strategies, have also been reported implementing certain types of emotion-focused strategies and avoidant coping strategies or mental disengagement, often through the use of alcohol (Kieffer, Cronin & Gawet, 2006).

### **2.2.3. University related stress between different race groups**

Previous studies investigated both the racial and socioeconomic differences in the manifestation of stress in an adolescent population (Finkelstein, Kubzonksu, Capitman & Goodman, 2007; Mehta, Newbold & O'Rourke, 2011). The studies reported greater levels of stress in Black students and adolescents from a low socioeconomic background. Similarly, other international studies (Goodman, McEwen, Dolon, Schafer-Kalkhoff & Adler, 2005; Wang & Castaneda-Sound, 2008) found that students representing the 'racial/ethnic minority' and first-generation students (those individuals who were the first in their families to continue with tertiary education), in a majority White university, experienced greater levels of stress and declining levels academic success (Phinney & Haas, 2003). Various studies have identified a need for research pertaining to the coping strategies employed by different races and ethnic groups in the university population as a means of managing stress (DeRoma, Leach & Leverett, 2009; Hystad, Eid, Laberg, Johnsen & Bartone, 2009; Welle & Graf, 2011; Bell & D' Zurilla, 2009).

Along with adapting to the rigorous demands of university life and its accompanying expectations, university students have to manage new and unexpected societal events and carry

out a number of developmental tasks, all of which coalesce to increase an individual's stress levels and deplete the individual's psychological resources (Serlachius, Hamer & Wardle, 2007; Myers, 2009). Overall, stress of varying magnitudes and intensities, in the form of academic stress, arises following the transition from high school to university – a process of leaving the safety of the home environment to live either on campus or closer to campus (Serlachius et al., 2007; Lunney, 2006; Sowa, 1992). Thus, one of the pre-eminent stressors of undergraduate university students is academic stress (Wei et al., 2010; Ross, Niebling & Heckert, 1999).

### **2.3. Academic stress in university students**

There are various sources of academic stressors among university students, especially among those entering tertiary education for the first time (Prabu, 2015; Stevenson & Harper, 2006; Morton et al., 2014). Sources of stressors at university are the result of a combination of academic expectations, demands and commitments (Bernstein et al., 2008; Pierceall & Keim, 2007); all of which may exceed a student's available resources needed to adapt (Prabu, 2015; Wilks, 2008), resulting in stress.

Kohn and Frazer (1986) identified three categories of stressors that university students may experience, in accordance to events that may occur. Firstly, physical stressors refer to the various environmental factors that may influence an individual's behaviour, such as noise and overcrowding in the university environment (Agolla & Ongori, 2009). Secondly, psychological stressors refer to emotional consequences (feelings of frustration, anger, and depression) that result from events such as adjusting to an increase in workload, studying for exams, and poor performance or failure (Fairbrother & Warn, 2003; Prabu, 2015). Finally, an individual's behaviour may also be influenced by psychosocial stressors or one's interpersonal interactions

(Kohn & Frazer, 1986), such as poor relationships with other students or lecturers, preparedness, and pressures to perform (Shaikh et al., 2004; Wilks, 2008). Separately, or combined, each of these categories of stressors can impact the student negatively; thus, depicting the challenges most, if not all, first year university students face upon entering into tertiary education.

Students have identified experiencing academic stress at anticipated times each semester with the greatest sources of academic stress subsequent to studying for and writing exams, competing amongst one another for highest grade, and the overwhelming amount of content to master in a limited time (Busari, 2012). Experiences of academic stress among university students is considered normal and, as with various other forms of stress, can be overcome by utilising appropriate coping strategies (Snehaja & Mani, 2016). Minimal levels of academic stress can result in positive experiences such as higher internal drives to motivate themselves and improved task performance (Khan & Alam, 2015; Shields, 2001). However, depending on the severity and duration of the stress, it can have a number of detrimental effects on students. In accordance with the transactional theory, each student assesses the stressful situation in a unique manner and manages the demands of academic stressors differently (Folkman et al., 1986). For instance, a first year student may experience stress after missing lectures, however, the same situation may not be experienced as stressful for another student based on his or her expectations (Prabu, 2015). How a student responds to academic stressors is considered a process in which specific actions and behaviours are undertaken to overcome the problem situation (Duhachek & Kelting, 2009).

A number of diverse factors shape the stress that students experience, and similarly, the impact that stress has on a student can manifest in a number of person specific ways (Renk &

Smith, 2007; Hicks & Heastie, 2008; Kamtsios & Karagiannopoulou, 2015), which can have varying effects – either positive or negative (Pederson, 2012; Mudhovozi, 2012). For example, those students who have good time management skills and good social support (Prabu, 2015) may deal with the stress of examinations by studying harder, whilst other students may respond by avoiding the situation and dropping out of studies (Shields, 2001). Numerous negative outcomes arising from students' experiences of academic stress have been found. Research has linked academic stress to a variety of chronic health (von Oncuil, 1996; Pederson, 2012) and mental health issues (Khan & Alam, 2015; Goh & Agius, 2010; Gellman & Turner, 2013), experienced through a variety of different symptoms, some of which include anxiety, depression, social dysfunction, suicidal intention and substance use (Dhakal, 2013; Nandamuri & Gowthami, 2011; Yusoff, Rahim & Yaacob, 2010).

In some instances, students cope with stress by alienating themselves from support systems, procrastinating, and disregarding their obligations to the university (Mostafei, 2012). Whilst other students seek to remove stress related symptoms through the use of alcohol and other substances (Welle & Graf, 2011; Busari, 2012; Sreeramareddy et al., 2007), which is considered to be an ineffective means of managing with university related stress as it has been found to increase levels of stress. Therefore, although some students are of the belief that alcohol and other substances aid in eliminating feelings of stress, Welle and Graf (2011) note that stress related physical ailments are experienced by those students managing stress through substance use. The current study has focused on university students use of alcohol as a means of coping with academic stress and, as such, seeks to understand the relationship between academic stress and alcohol use. However, an understanding of alcohol use within the population is needed before inferences can be made on the association between alcohol use and academic stress.

## **2.4. Alcohol use and university students**

International studies have identified early adulthood, i.e. 18-25 years, as a period of increased alcohol use (Muthén & Muthén, 2000; Kuntsche et al., 2004; du Preez et al., 2016). When compared to non-university students, university students were reported to show lower levels of alcohol use both prior to and following their tenure at university (Johnston & O'Malley, 1986; Muthén & Muthén, 2000). As such, notable variations in alcohol use among the university population has been reported, with a subset of the population demonstrating episodic, heavy drinking behaviour (Schulenberg, O'Malley, Bachman, Wadsworth & Johnston, 1996). Thus, university culture has been identified as one in which the perceptions of alcohol use have been normalized and are, to some extent, encouraged among different peer groups in the population of university students (Ham & Hope, 2003). As such, alcohol is considered to be an expected part of the university experience and is something that numerous first year university students grapple with (Bosari & Carey, 2006; Morutwa & Plattner, 2014; Moitlakgola & Amone-P'Olak, 2015). However, in order to fully comprehend the impact alcohol use may have on university going students, one needs to discern the extent of alcohol use within the South African context, between peoples of different races and genders.

### **2.4.1. Alcohol use in the South African context**

In the South African National HIV, Incidence, Behaviour and Communication (SABSSM) survey carried out in 2008 (Peltzer, Davids & Njuho, 2011), a population sample of 15,828 (43.7% were male and 56.3% were female) was used to determine the extent of alcohol use throughout South Africa. Peltzer et al. (2011) identified those individuals between the ages of 18 and 35 years as being the most at risk for binge drinking behaviour in South Africa. Similarly, a number of international studies have associated the period of early



adulthood with an increased level of alcohol use (Muthén & Muthén, 2000; Kuntsche et al., 2004). Regarding the distribution of alcohol use among the different races and ethnic groups within South Africa, Peltzer and Ramlagan (2009) reported on binge drinking behaviour among males from highest to lowest usage: Coloureds (23%); Whites (16%); Africans (13%) and Indians (7%). A slight increase in the percentages between the 2005 and 2008 SABSSM surveys was noted (Peltzer et al., 2011). Concerning the data presented above, and in the literature to follow, it must be noted that focus appears to be given to the categories of alcohol use – risky, hazardous, harmful, and dependent – and does not always refer to alcohol use in general.

In accordance with the 2008 SABSSM survey, Peltzer et al (2011) noted that more males (41.5%) reported current alcohol use than females (17.1%), of which the most likely users were identified as being White males (69.8%). Peltzer et al. (2011) reported that of the 9% of the population that reported risky, hazardous, or harmful drinking, 17% were male and 2.9% were female. The SABSSM survey identified a number of key variables related to risky drinking behaviour in the male and female populations (Peltzer et al., 2011). In the male population, risky drinking behaviour was linked to the 20-54-year age group (Kyei & Ramagona, 2013; Pengpid, Peltzer & Van Der Heever, 2013; Young & de Klerk, 2008), the Coloured population and a lower economic status. Similarly, the Coloured population was associated with risky drinking among the female population; however, place of residence and income status were also shown to have an impact on female's drinking behaviour (Peltzer et al., 2011; Lategan et al., 2017). Overall, it was found that alcohol use varied amongst the population of South African citizens according to a number of variables, such as an individual's sex, age, population group and income status. Notably, the highest levels of alcohol use were

reported as coming from the Province of the Western Cape and the province of the Northern Cape (Peltzer et al., 2011).

A study conducted by Young and de Klerk (2008) on a population of university students in the South African context, corroborated a number of the results found by the 2008 SABSSM survey in terms of gender differences in alcohol consumption. Young and de Klerk (2008) noted that male university students reported a higher level of alcohol use and more at risk drinking behaviour when compared to their female counterparts. Furthermore, Young and de Klerk (2008) reported on differences in alcohol use according to university students' place of residence. It is worth noting that students living independent of their parents and/or supervision of the university, in either privately owned or rented/shared accommodation, were reported to be predisposed to higher levels of alcohol use than those living with their parents or in university residence (Young & de Klerk, 2008). However, conflicting information concerning alcohol use among the different race groups was noted. White students were identified as using more alcohol than other race groups and were considered more likely to engage in risky or harmful drinking behaviour (Young & de Klerk, 2008), delineating from the study by Peltzer et al. (2011) that identified the Coloured population as the most prevalent group to engage in risky or harmful drinking practices. An explanation for the differences between the two studies could be that the Young and de Klerk study comprised of a small population of Coloured students, which suggests that the group was not adequately represented in the sample population.

In a study carried out on medical students at the University of Free State, Smit, Pretorius and Joubert (2009) found that roughly a third of the students sampled admitted to excessive alcohol intake, with 55.3% being recognised as at-risk drinkers. Similar results were reported

in studies carried out in the Eastern Cape at Rhodes University (Young & de Klerk, 2008) and in the Limpopo province at the University of Venda (Kyei & Ramagona, 2013). University students identified alcohol, amongst other substances, as being the most frequently used substance during recreational activities with friends. A number of studies have reported high levels of alcohol use among university students in both social/communal living areas and larger social gatherings (McCabe et al., 2005). Differences in patterns of alcohol use have been found between universities that offer on-site residence and those that do not, with higher drinking levels being reported for those universities with on campus accommodation (Presley, Meilman & Leichliter, 2002). Furthermore, higher levels of alcohol use were reported at universities where access to alcohol was made available on campus (Dowdall & Wechsler, 2002).

Thus, the experience of academic stress is considered a major contributory factor toward alcohol use amongst university students (Mphele, Gralewski & Balogun, 2013; Tavoracci et al., 2013). Furthermore, alcohol use, in terms of frequency and quantity, is influenced significantly by an individual's year of study. In a review of literature, Ham and Hope (2003) identified several person specific factors that aid in explaining the impact the university context has on the drinking behaviour of university students, namely: thought processing, personality characteristics, and coping strategies. However, one of the key findings of the review was that rates of alcohol consumption were highest in males compared to females (Ham & Hope, 2003; Knight et al., 2002). The differences in the patterns of alcohol use between genders was explored by Cooper et al. (1992), where it was noted that females have the tendency to internalize their feelings and emotional responses to stressful situations, whereas males were found to address negative stress responses through the use of alcohol. Thus emerged the idea that there is a reliance on substances, in particular alcohol, as a means to

manage the reduction of stress related symptoms (Cooper et al., 1992; Chalder, Elgar & Bennett, 2006; Moitlakgola & Amone-P'Olak, 2015).

## **2.5. Links between stress and alcohol use: Tension-Reduction Theory**

Historically, stress management and alcohol use have always been related, despite the complexity of the relationship described between the two (Sayette, 1999). In spite of the often-negative outcomes of drinking, the expected stress-relieving effect of alcohol has been a consistent topic of study, as researchers posit it as being a primary motivation behind the consumption of alcohol (Backer-Fulghum et al., 2012). Stress management, as noted in the works of Tesfai (2016), is the process of utilising one's psychological and physical resources as a means controlling or reducing tension that may arise when overwhelmed by tasks, difficulties and responsibilities. However, it is an individual's interpretation of the stressor that governs the coping style employed.

One of the prominent theories on the relationship between alcohol use and stress, is the tension-reduction theory. The tension-reduction theory (TRT) supported the belief that individuals used alcohol to reduce feelings of stress, but also acknowledged the possible development of alcohol-related problems that may arise from this type of thinking (Sayette, 1999). The core hypothesis of TRT is the prediction of a bidirectional relationship between alcohol consumption and stress: alcohol use, under certain circumstances, will reduce stress; and some stressful circumstances will motivate the individual to consume alcohol (Sher, Bartholow, Peuser, Erickson & Wood, 2007). Thus, TRT stipulates that alcohol consumption can be seen as an individual's means of escape from negative cognitions and emotions accompanying certain stressors (Armeli, Tennen, Affleck & Kranzler, 2000; Backer-Fulghum et al., 2012). TRT has been proven efficient in explaining alcohol use in those individuals who

have few active coping mechanisms but who believe alcohol will help them cope with stressors (Chalder, Elgar & Bennett, 2006; Cooper et al., 1992).

A study conducted by Sher et al. (2007), noted that although a large majority of individuals will consume alcohol as a means of reducing stress, this process is said to be dependent on various factors such as routine drinking habits and possible genetic determinants. An individual's belief system pertaining to the beneficial or detrimental effects of alcohol use, are commonly referred to as alcohol expectancies (Ham & Hope, 2003). For example, it was reported that social and problem drinkers alike expect there to be a reduction in stress upon consuming alcohol. Similarly, it was found that frequent drinkers used alcohol as a means of coping with negative emotions (Anderson, 2009). Ham and Hope (2003) found that stress resulted in larger amounts of alcohol consumed per sitting, rather than a higher frequency of drinking.

Tension reduction strategies focusing on alcohol use to reduce feelings of stress have been related to negative consequences as a result of drinking (Ham & Hope, 2003). Amongst the population of university students, talking to family and friends, leisure activities, and exercising, have been identified as the most commonly used activities by university students to cope with stress (Pierceall & Keim, 2007; Snehaja & Mani, 2016). While forms of maladaptive coping have been identified as including alcohol consumption and other substance use (Pierceall & Keim, 2007). Thus, through the application of the tension-reduction theory, it is possible to hypothesise that alcohol use may be employed as a means of decreasing levels of stress when positive resources are unavailable to students.

## **2.6. Synopsis of the literature review**

To summarise, a common thread found through the literature reviewed was that of the impact the transitional period from secondary education to tertiary education can have on an individual's life. Research identified a number of factors impacting on an individual's ability to function within the university context, such as academic and social demands, a new sense of autonomy, and independence from the family system. All of which may result in an increase in an individual's experience of stress based on the availability of resources needed to cope with stressful life events. International and local research have demonstrated the importance of stress related research, especially in terms of gender and race/ethnic groups. Identified in the literature was a need for research pertaining to the experiences of stress and coping strategies employed by different race/ethnic groups, as a number of factors, such as socioeconomic status and place of residence, were related to differences in experiences of stress between different race groups. Of the research related to the South African population, Jackson et al. (2010) reported on the South African Stress and Health surveys of 2002 and 2004. Although providing significant information pertaining to experiences of stress among the South African population groups, the data is dated; and changes in the demographic characteristics of the population may have occurred that are not accounted for.

International and local research, both dated and recent, identified the population of young adults (ages 18 to 25) as being the most at risk population for increased alcohol use and increased levels of heavy drinking behaviour (O'Neill, Parra & Sher, 2001). Internationally, studies have drawn links between students' experiences of academic stress and their use of alcohol (Welle & Graf, 2011). Yet, local research is limited. Thus, it is important to understand the association, if any, between academic stress and alcohol use in the population of university students, who have been identified as vulnerable and poorly equipped with the resources

necessary to overcome the stressors they face in the university environment. With alcohol use rife among the population of university students within the South African context (Young & de Klerk, 2008; Smit, Pretorius & Joubert, 2009; Kyei & Ramagona, 2013) and the known negative impact it can have on an individual's life (Keyes et al., 2012), understanding the association between academic stress and alcohol use becomes an important area of research. Identifying the presence of a relationship between the two, academic stress and alcohol use, can impact on the development of future policies and legislation, so as to aid in the well-being of university students.

## **2.7. Conclusion**

The current chapter focused on placing the university students' environment into context and highlighting ways in which the context impacts on their experiences, as related to academic stress and alcohol use, based on the endeavours of previous studies. Findings from previous studies concerning the relationship between academic stress and alcohol use among different populations were explored.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3. Introduction**

The purpose of the following chapter is to provide a detailed account of the procedures carried out in the current study. The paradigmatic stance and the design of the study have been elaborated on. The research participants and the research process are detailed. To conclude the chapter, the measures taken to uphold the research quality as well as the ethical considerations are outlined.

#### **3.1. Research design**

De Vaus (2001) defines the research design as the structure that needs to be put in place before data collection and/or analysis can commence. The research design ensures that the researcher answers the research question(s) as unambiguously as possible (De Vaus, 2001).

The current study adopted a post-positivist paradigm; the study employed a quantitative approach, whereby quantitative data collection and analysis procedures were used (Neuman, 2011; Creswell, 2013). More specifically, a correlational research design was implemented (Babbie, 2011). A question pertaining to the relationship between stress and substance use experienced by university students within the South African context was put forward and refined. Thus, the quantitative study sought to determine possible correlations between second year university students' experiences of academic stress in their first year and their use of alcohol to cope. As such, a portion of the second year student population at a Gauteng university, within the South African context, was examined.



### **3.2. Participants**

The present study made use of a cross-sectional design, targeting the population of second year students from the Humanities Faculty enrolled at a South African University, who reported on their first year experience.

#### **3.2.1 Inclusion and exclusion criteria**

The primary objective of the study was to identify the existence of a relationship between academic stress and alcohol use as reported by second year students about their experience of alcohol use to cope in the first year. The following inclusion criteria were established:

1. Participants had to be 18 years or older.
2. Participants had to be enrolled in their second year of study at the elected university, in the Faculty of Humanities.
3. Participants had to be competent in English as it was the medium through which data was collected.

Due to the lower number of studies in which second year students of the university were proposed to be surveyed, it was hypothesised that they, as a population, would yield a greater response rate. Second year students reporting on their experiences of academic stress and alcohol use would increase the integrity of the study and its generalisability to the population at large. The population of second year university students were contacted with the help of a member from the Survey Committee, an organisation within the elected university. An invitation letter, containing all relevant information related to the study, was sent to all potential participants by way of an email. The demographics of the targeted sample was representative of a diverse range of characteristics – race, gender, and place of residence – of the population.

The population of second year university students currently attending a South African university in 2018 was  $N = 2,544$ . Thus, as the population was known and considered finite, the sample size table for finite populations was used (Krejcie & Morgan, 1970). Therefore, based on the sample size formula, the recommended sample size or (S), necessary for the data to be considered reliable and generalizable to the given population, was 334 with a 95% confidence level and 5% margin of error. A convenient sample<sup>4</sup> of 109 students from the elected university was obtained for the current study. However, of the 109 students only 81 had completed the survey in full and were considered 'usable' ( $n = 81$ ). As such, the completion rate for the survey was 74.3% based on a response rate of 4.2%.

### **3.3. Instruments**

The explanatory non-experimental category of internet survey methods was utilised, as it enabled the researcher to gather extensive information on a specific characteristic while generating an accurate picture of the experiences of those individuals being studied (Gravetter & Forzano, 2012; Maree & van der Westhuizen, 2009); all the while allowing participants to access and complete the questionnaire anonymously at their own convenience (Check & Schutt, 2011). Data was collected through the use of the Qualtrics<sup>5</sup> programme by means of self-report questionnaires distributed electronically via email (Alasuutari, Bickman, & Brannen, 2008). As an online survey, the researcher was cognisant of the fact that online surveys have been reported to be an unreliable means to achieve response rates similar to, or

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<sup>4</sup> Convenience sampling (Babbie, 2011; Gravetter & Forzano, 2012) allows for the selection of participants on the basis of availability and willingness to engage. In the current study, participants were selected based on the response to the online survey. Convenience sampling restricts the researcher's control over the representativeness of the overall sample, reducing the study's generalisability to the population. (Babbie, 2011)

<sup>5</sup> The Qualtrics programme is a powerful online survey tool that has been made available upon request to all staff members and students registered at the University. As such, this tool enables users to create, distribute and record survey responses, anonymously, under specific parameters (Qualtrics, 2017).

as high as, those obtained from paper-based surveys (Nulty, 2008; Liu & Wronski, 2017). In order to gather all the pertinent information from the participants, a three-part survey questionnaire was used. The survey made use of the following instruments in the data collection process:

### **3.3.1. Perceived Stress Scale (PSS)**

The 10-item PSS was used to evaluate the extent of general life stressors in a student's life that are perceived and/or experienced as stressful and uncontrollable (Cohen, Kamarck & Mermelstein, 1983). General life stress is related to academic stress. For instance, stress at home may lead to feeling distracted, which may bring about a lack of focus in class and, ultimately, result in academic stress in the form of being unprepared for tests or performing poorly. In the PSS participants were asked to respond to items, such as: "In the last month, how often have you felt nervous and stressed", on a 5-point Likert scale ranging from 0 (never) to 4 (very often), indicating the frequency of having experienced particular emotions and cognitions within a designated period. Scores range from 0 to 40, with a higher score signifying an increased level of perceived stress. The PSS has been widely used internationally, as well as locally within the South African context (Spangenberg & Henderson, 2001; Hamad, Fernald, Karlan & Zinman, 2008; Magalhaes Das Neves, Loots & van Nieker, 2015; Pau et al., 2007). As such, the PSS was chosen based on its adequate psychometric properties, as evident in the works of Cohen and Williamson (1988), with the internal reliability reported to be in an acceptable range ( $\alpha = .78$ ). The internal reliability for the PSS in the current study was calculated at 0.87, which is greater than the reported alpha for the original full scale and suggests a high degree of internal consistency (Field, 2009; Sekaran, 2001).

### 3.3.2. Academic Stress Scale (ASS)

The ASS was constructed to evaluate the students' perceived academic stressors through the identification and evaluation of influential stressors affecting students (Kohn & Frazer, 1986). Kohn and Frazer asked participants to score each stressor on a scale of 1 to 1000 (using a predetermined rating of 500 for "Examinations" as a generic point of reference). The original response format was not considered appropriate for the current study, and as such a 5-point response format was used to collect data (Renk & Smith, 2007; Wilks, 2008). Participants were asked to report their level of stress experienced under 35 different stressful situations utilising a 5-point Likert-type scale to grade each item; from "Not at all stressful" to "Extremely stressful". The items included stressful situations like examinations, excessive homework and missing classes. Together the items yield a total score, which was attained through the summation of scores provided for each item, with a higher score indicating an increased degree of stress (Burnett & Fanshawe, 1997; Masciadrelli, 2001; Wilks, 2008). The internal consistency for the 35 stressors, as measured by Cronbach's alpha, was 0.92 for the full scale (Kohn & Frazer, 1986). In the current study, the Cronbach's alpha for the ASS was calculated to be 0.93, which indicated a high degree of internal consistency (Christensen, Johnson & Turner, 2014). It must be noted that the ASS has not been found to have been used within the South African context but has been used in other countries (e.g. America and Asia), looking at experiences of academic stress among the university student population (Burnett & Fanshawe, 1997; Renk & Smith, 2007; Wilks, 2008).

The ASS has been used as a means to measure the levels of academic stress experienced by the population of second year university students; as such, the researcher has implemented the scale to identify the possible variances in stress (academic) amongst the population. In doing so, the researcher sought to answer the question of: "does academic stress correlate with

alcohol use?” Therefore, the researcher did not use the scale in the same way as posited by Kohn and Fraser (1986), but rather made use of the 35 variables as a measure of academic stress to create a measure of variance (Burnett & Fanshawe, 1997; Masciadrelli, 2001).

### **3.3.3. Alcohol Use Disorder Identification Test (AUDIT)**

The AUDIT consisted of 10 items. The test measured levels of alcohol consumption, signs of alcohol addiction, and alcohol related complications (Babor, Higgins-Biddle, Saunders & Monteiro, 2001). Examples of items from the AUDIT included, “how often do you have a drink containing alcohol” and “how often do you have six or more drinks on one occasion”. The AUDIT allows for item responses to be rated on a 4-point Likert scale that range from 0 to 4, for a maximum score of 40 points. High AUDIT scores are indicative of more severe levels of risk; with scores of 8 or more indicating a predisposition toward problematic drinking. The AUDIT was developed by the World Health Organization and serves as a valuable screening tool for alcohol related problems (Babor et al., 2001; Saunders, Aasland, Babor, de la Fuente & Grant, 1993), and has been used extensively as a standard tool in the South African context (Peltzer, Davids & Njuho, 2011). Cronbach’s alpha ( $\alpha = 0.85$ ) for the AUDIT was found to be of a good level and indicated a high degree of internal reliability.

### **3.4. Procedures**

Two sets of permission needed to be obtained before data could be collected. Firstly, from the Faculty of Humanities’ Research and Ethics Committee (see Appendix A), and secondly, from the chairperson of the Survey Committee permitting the researcher access to the student population of the elected university. In anticipation of any emotional disturbance or discomfort, the elected universities’ Student Counselling Division was approached concerning the availability of counsellors, should participants experience discomfort or distress

from having answered the questionnaire. It was noted in the online cover letter that student support was available should participants need it, but that they (the participants) would need to schedule appointments in the same manner as other university-going students. The targeted sample of participants were second year university students registered at a university in the Gauteng province of South Africa. The survey was comprised of a self-report questionnaire that was self-administered through the online system, Qualtrics. A detailed description of the current study was provided in the online invitation and cover letter that was emailed to the population of second year students. Participants were made aware of both the voluntary nature of the study and of their rights to withdraw at any point in the study.

### **3.5. Ethical considerations**

The researcher ensured that the current study was approved by the university's research ethics committee. The following ethical guidelines were taken in to consideration and adhered to (Thomas & Hersen, 2011):

#### **3.5.1 Informed consent**

Due to the fact that an online method of contacting students was used, attaining written consent became unnecessary as a statement was made stating that completion and submission of the questionnaire served as evidence of an agreement to participate in the study. The participants in the current study were second year university students, above the age of 18, which meant that they could legally give consent to participate (HPCSA, 2008).

#### **3.5.2 Confidentiality**

Participation in the study was of a completely voluntary nature, with the participants being allowed to withdraw at any given time. Participants were not asked to provide their name

or student numbers. Thus, all information collected from participants throughout the research study was kept strictly confidential, with all results being coded before analysis to ensure anonymity. All references to participants in the report and any subsequent publications/presentations has been, and will be, kept anonymous.

### **3.6. Conclusion**

The current chapter provided an in-depth overview of the research methods utilised by the researcher when conducting the study. As was clear throughout the chapter, a positivistic outlook has been upheld throughout the course of the study by means of the quantitative approach followed. The quantitative nature of the study gave way to the descriptive, non-experimental design illustrated throughout the remainder of the chapter through the different methods and data gathering instruments utilised. The chapter identified and described the research participants that collaborated in completing the study, and the process undertaken to meet the research objectives. The current chapter concluded with a detailed account of the procedures that preserved the quality of the study and, finally, outlined the measures put in place to ensure that all ethical considerations were addressed.

## CHAPTER FOUR

### RESULTS

#### 4.1. Data analysis strategy

Data analysis for the current study was conducted using the Statistical Package for the Social Sciences (SPSS) 22.0 (Newton & Rudestam, 2013). Analysis was carried out to determine, amongst others, the sample and data characteristics (e.g. mean, standard deviation, frequencies and percentages, internal consistencies of the instruments, and the association between the measured variables) (Gravetter & Forzano, 2012; Kumar, 2014). Normality checks and the Levene's test were used to identify the applicability of the independent samples t-test, one-way ANOVA, Mann-Whitney U test and Kruskal Wallis test; all of which were used to assess for significance between variables. Correlation analysis by way of Spearman's rank correlation coefficient ( $\rho$ ) was used to discern the strength and direction of the relationship between academic stress and alcohol use, if any (Levin & Fox, 2014; Pallant, 2011). In addition, partial correlation analysis was used as a means of excluding a third variable (in this case perceived stress) to focus solely on the two key variables (academic stress and alcohol use) pertinent to the study at hand (Pallant, 2011).

#### 4.2. Presentation of results

##### 4.2.1. Biographic and demographic information

Of the population identified (N = 2,544), a total of 109 students were available for the study. However, due to missing data in the form of incomplete survey responses, only 81 (71.6% were female and 27.4% were male) of the 109 students were included in the analysis. As indicated in table 1, it is clear that a significant portion of the participants were between the



ages of 18 and 21 years of age ( $n = 63, 77.8\%$ ), whilst the remaining participants were 22 years of age or older ( $n = 18, 23.3\%$ ).

**Table 1: Age (in years) of participants**

	<i>n</i>	%
<i>18-21</i>	63	77.8
<i>22-25</i>	16	19.8
<i>26 and older</i>	2	2.5
<b><i>Total</i></b>	<b>81</b>	<b>100.0</b>

In accordance with table 2, almost half of the participants were identified as White students ( $n = 40, 49.4\%$ ), whilst a large portion of the remaining participants were African students ( $n = 34, 42.0\%$ ). The participants representing Coloured ( $n = 5, 6.2\%$ ), Indian ( $n = 1, 1.2\%$ ), and Mixed-race ( $n = 1, 1.2\%$ ) groups were limited in size. Due to the small sample size and underrepresented race groups – Coloured, Indian, and Mixed-race – the possibility of obtaining skewed results was significantly increased. In an attempt to reduce the impact of the underrepresented groups, new groupings for the demographic category of race were created to allow for statistical analysis by way of ANOVA, as seen in table 3. Thus, two sets of analysis were run in order to assess for significance between race and the different scales (ASS, PSS, and AUDIT). First, analysis was done between African students and White students, and saw the removal of Coloured, Indian, and Mixed-race participants to avoid skewed results. As a means to include all participant responses in the analysis, the five race groups were collapsed into two groups of Black (African, Coloured, Indian, and Mixed-race) students and White students. The use of the groupings ‘Black’ and ‘White’, is in keeping with the contextual guidelines put in place by the Employment Equity Act, Act number 55 of 1998 and, in doing so, allows for the inclusion of all participant responses (Employment Equity Act 1998, 2018).

**Table 2: Descriptive summary of gender and place of residence by race**

	Race										Total	
	African		White		Coloured		Indian		Mixed-race		n	%
	n	%	n	%	n	%	n	%	n	%	n	%
<b>Gender</b>												
Male	8	23.5	12	30.0	2	40.0	-	-	-	-	22	27.2
Female	26	76.5	27	67.5	3	60.0	1	100.0	1	100.0	58	71.6
<b>Total</b>	<b>34</b>	<b>100.0</b>	<b>39*</b>	<b>97.5</b>	<b>5</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>80*</b>	<b>98.8</b>
<b>Place of residence</b>												
Stay with parent(s) or family	9	26.5	18	45.0	1	20.0	-	-	-	-	28	34.6
University residence	7	20.6	10	25.0	1	20.0	1	100.0	-	-	19	29.6
Rent or share accommodation	15	44.1	6	15.0	2	40.0	-	-	1	100.0	24	23.5
Stay with others (commune)	2	5.9	6	15.0	1	20.0	-	-	-	-	9	11.1
Alone	1	2.9	-	-	-	-	-	-	-	-	1	1.2
<b>Total</b>	<b>34</b>	<b>100.0</b>	<b>40</b>	<b>100.0</b>	<b>5</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>81</b>	<b>100.0</b>

\* missing data: question not answered

The data, as depicted in table 2 above, indicated variance in the place of residence amongst the participants, with slightly more than a third of the participants (n = 28, 34.6%) residing with their parents and the remainder (n = 53, 65.4%) having moved out of the family home environment.

Table 3 presents the overall descriptive statistics for the present study's survey. The table depicts the mean scores (M) and standard deviations (SD) for each scale utilised and allows for comparisons to be drawn between the sample population based on gender, race, and place of residence.

**Table 3: Overall descriptive statistics for the different scales surveyed**

			<i>Academic Stress Scale</i>		<i>Perceived Stress Scale</i>		<i>AUDIT</i>	
	n	%	Mean (M)	Standard deviation (SD)	Mean (M)	Standard deviation (SD)	Mean (M)	Standard deviation (SD)
<b><i>Gender</i></b>								
<i>Male</i>	22	27.2	62.84	20.98	20.55	6.34	10.33	8.23
<i>Female</i>	58	71.6	78.21	24.79	22.74	7.30	5.96	6.67
<b><i>Total</i></b>	<b>80*</b>	<b>98.8</b>	<b>73.81</b>	<b>24.56</b>	<b>22.13</b>	<b>7.04</b>	<b>7.46</b>	<b>7.68</b>
<b><i>Race</i></b>								
<i>African</i>	34	42.0	87.67	20.92	24.12	7.27	7.81	8.22
<i>Coloured</i>	5	6.2	62.13	24.48	20.40	5.03	4.60	3.78
<i>Indian</i>	1	1.2	86.00	-	31.00	-	16.00	-
<i>Mixed-race</i>	1	1.2	65.00	-	27.00	-	13.00	-
<i>White</i>	40	49.4	63.40	22.44	20.32	6.65	7.11	7.66
<b><i>Black</i></b>	<b>41</b>	<b>50.6</b>	<b>83.90</b>	<b>22.40</b>	<b>23.90</b>	<b>7.00</b>	<b>7.75</b>	<b>7.80</b>
<b><i>White</i></b>	<b>40</b>	<b>49.4</b>	<b>63.40</b>	<b>22.44</b>	<b>20.32</b>	<b>6.65</b>	<b>7.11</b>	<b>7.66</b>
<b><i>Total</i></b>	<b>81</b>	<b>100.0</b>						
<b><i>Place of Residence</i></b>								
<i>Stay with parent(s) or family</i>	28	34.6	72.63	27.73	22.82	7.87	8.83	8.76
<i>University residence</i>	19	23.5	72.89	20.29	22.19	7.35	5.16	7.84
<i>Rent or share accommodation</i>	24	29.6	80.24	25.45	22.67	6.88	7.11	6.77
<i>Stay with others (commune)</i>	9	11.1	66.70	16.14	19.00	3.24	8.11	6.21
<i>Alone</i>	1	1.2	34.00	-	17.00	-	13.00	-
<b><i>Total</i></b>	<b>81</b>	<b>100.0</b>						

Note. 'Black' student group is comprised of the African, Coloured, Indian, and Mixed-race population groups, whilst the White student group is comprised of the White population group. These groups were created to aid in the statistical analysis by way of ANOVA, as the Coloured, Indian and Mixed-race population groups were represented by a small number that would result in skewed data. The groups are in keeping with the contextual guidelines put in place by the Employment Equity Act, Act number 55 of 1998.

#### 4.2.3. Perceived stress scale (PSS)

From the data gathered, it was identified that the mean (M) score on the PSS was 22.13 (SD = 7.03). The mean score for male participants was 20.5 (SD = 6.34), whilst the female mean score was slightly higher at 22.7 (SD = 7.30). As illustrated in table 4 below, three levels of perceived stress have been identified amongst the participants. Individual scores on the PSS can range from 0 to 40, where higher levels of perceived stress are indicated by higher scores.

Scores ranging from 0-13 are considered indicators of low stress; scores ranging from 14-26 are indicative of moderate stress; and those within the range of 27-40 would be considered indicators of high perceived stress. Of note is that the majority of participants scored at a moderate level of perceived stress ( $n = 52, 64.2\%$ ), with a significant portion of the remaining participants scoring at a high level of perceived stress ( $n = 21, 25.9\%$ ).

**Table 4: Levels of perceived stress**

	<i>n</i>	%
<i>Low stress (0-13)</i>	8	9.9
<i>Moderate stress (14-26)</i>	52	64.2
<i>High stress (27-40)</i>	21	25.9
<b>Total</b>	<b>81</b>	<b>100.0</b>

Normality checks and the Levene's<sup>6</sup> test were carried out and the assumptions met for an independent samples t-test, which was conducted to determine if there were differences in perceived stress levels of male and female students. There was not a significant difference in the scores for males ( $M = 20.55, SD = 6.3$ ) and females ( $M = 22.74, SD = 7.3$ );  $t(78) = -1.240, p = 0.2$ . These results suggest that gender does not have an effect on perceived stress.

The assumptions were met for an independent samples t-test, which was conducted to determine if there were significant differences in perceived stress levels of African students and White students (excluding Coloured, Indian and Mixed-race students due to underrepresentation). There was a significant difference in the scores for African students ( $M = 24.12, SD = 7.27$ ) and White students ( $M = 20.32, SD = 6.65$ );  $t(72) = 2.345, p = 0.022$ . The

<sup>6</sup> Levene's test is used to verify the assumption that variance across the sample is equal. The test generates a p-value that is comparable to the alpha level for the test (Brown & Forsythe, 1974). If the p-value is greater than the alpha level, then variances are assumed equal. However, the opposite is true if the p-value is smaller than the alpha level, and variances are assumed unequal (Brown & Forsythe, 1974).

results indicate that African students experience higher levels of general life stress compared to White students, as measured by the PSS. The results suggest that perceptions of stress differ between race groups. Similarly, an independent samples t-test was conducted to determine if there were significant differences in perceived stress levels of Black (African, Coloured, Indian and Mixed-race) students and White students. A significant difference in the scores of Black students ( $M = 23.9$ ,  $SD = 7.0$ ) and White students ( $M = 20.32$ ,  $SD = 6.6$ );  $t(79) = 2.357$ ,  $p = 0.02$  corroborating the finding that perceptions of stress differ between race groups.

Normality checks and the Levene's test were carried out and the assumptions met for one-way ANOVA, which was conducted to determine if there were differences in perceived stress levels of students based on their place of residence<sup>7</sup>, namely: 1) live with their parents/family; 2) live on campus in a residence; or 3) who live in a commune/shared accommodation. No significant difference in perceived stress for the three different residence options [ $F(2.77) = 0.199$ ,  $p = 0.820$ ] was identified.

#### **4.2.4. Academic stress scale (ASS)**

Percentile range was used to create categories for the ASS, which worked as follows: scores of 58 and less were categorised as low and fell within the 25<sup>th</sup> percentile range; scores between 59 and 92 were scored as moderate and fell within the 50<sup>th</sup> percentile range; and finally, those scores of 93 and above were scored as high and fell within the 75<sup>th</sup> percentile range. As depicted in table 5 below, almost half of the participants scored within the moderate range for perceived stress ( $n = 40$ , 49.4%), with the remaining participants having scored within the high range ( $n = 20$ , 24.7%) and the low range ( $n = 21$ , 25.9%).

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<sup>7</sup> For the purpose of data analysis by way of a one-way ANOVA, three of the five categories of place of residence ('Rent or share accommodation', 'Stay with others (commune)', and 'Alone') were collapsed to fall under the category of shared accommodation. The reason being that the sample representation in the categories were too low, and could potentially skew the data.

**Table 5: Categories of academic stress**

	<i>n</i>	<i>%</i>
<i>Low stress</i>	21	25.9
<i>Moderate stress</i>	40	49.4
<i>High stress</i>	20	24.7
<b><i>Total</i></b>	<b>81</b>	<b>100.0</b>

From the data collected of the 81 participants the mean (M) score for the academic stress scale was calculated as being 73.81 (SD = 24.56). To assess for the presence of any differences in the academic stress levels of male students compared to that of female students, normality checks and the Levene's test were carried out and the assumptions met for an independent samples t-test. Based on the outcome of the independent samples t-test, a significant difference in the scores for males (M = 62.84, SD = 20.9) and females (M = 78.21, SD = 24.8);  $t(78) = -2.576$ ,  $p = 0.12$ ; was noted. The results suggest that experiences of academic stress differed on the basis of gender, with female students reporting higher levels of academic stress than male students, as measured by the ASS.

In the literature reviewed, studies identified individual differences in experiences of academic stress (Kamtsios & Karagiannopoulou, 2015); however, it was also noted that the university context and its accompanying academic demands were experienced differently between race groups (Finkelstein et al., 2007). Furthermore, as levels of general stress were found to differ between race groups, the researcher also sought to explore any differences in academic stress levels of African students and White students. In doing so, differentiating experiences of academic stress from that of general life stress.

Normality checks and the Levene's test were carried out and the assumptions met for an independent-samples t-test. Based on the results obtained from the data, as seen in table 3, there

was a significant difference in the scores for African students ( $M = 87.67$ ,  $SD = 20.92$ ) and White students ( $M = 63.40$ ,  $SD = 22.44$ );  $t(72) = 4.782$ ,  $p = 0.000$ . The results implied that African students experience increased levels of academic stress when compared to White students based on the scores on the ASS. The difference in scores between African and White students suggest that experiences of academic stress differs between race groups. Similarly, in an attempt to corroborate the finding between race group and academic stress, an independent samples t-test was conducted for Black (African, Coloured, Indian and Mixed-race) students ( $M = 83.96$ ,  $SD = 22.4$ ) and White students ( $M = 63.4$ ,  $SD = 22.4$ );  $t(79) = 4.128$ ,  $p = 0.000$ . The results show a significant difference between the two groups, with Black students scoring higher than White students on the ASS.

Finally, normality checks and the Levene's test were carried out and the assumptions met for one-way ANOVA, which was carried out to determine if there were differences in academic stress levels of students coming from different places of residence, namely: 1) living with their parents/family; 2) living on campus in a residence; or 3) those who live in a commune/shared accommodation. No significant difference in academic stress was found for the three different residence options [ $F(2, 77) = 0.234$ ,  $p = 0.792$ ].

#### **4.2.5. Alcohol Used Disorder Identification Test**

Of those that participated in the questionnaire, as seen in table 6, it was found that less than a quarter of the participants never drank alcohol ( $n = 17$ , 21.0%), whilst majority of the participants reported consuming alcohol at least once a month or more ( $n = 64$ , 79.0%).

**Table 6: Frequency of alcohol use**

	<i>n</i>	%
<i>Never</i>	17	21.0
<i>Monthly or less</i>	28	34.6
<i>2-4 times a month</i>	15	18.5
<i>2-3 times a week</i>	13	16.0
<i>4 or more times a week</i>	8	9.9
<b><i>Total</i></b>	<b>81</b>	<b>100.0</b>

Consumption, for the purpose of the current study, has been used to describe the use of substances, and more specifically, the intake of alcohol. With regards to the number of alcoholic drinks consumed on an average day of drinking, it was found that just over a third of participants ( $n = 22$ , 34.4%) reported that they consumed between one and two drinks, whilst a small percentage of participants ( $n = 5$ , 7.8%) were identified as drinking 10 drinks or more on a typical day of drinking.

The scores from the AUDIT can be separated into four key categories, namely: low risk (scores of 0 to 7), medium risk (scores of 8 to 15), high risk (scores of 16 to 19) and alcohol addiction likely (scores of 20 to 40). Based on the data obtained from the participants, and as depicted in table 7 below, more than half of the participants scored within the ‘low risk’ range ( $n = 51$ , 63.0%). It must be noted that a small percentage of participants scored within the ‘alcohol addiction likely’ range ( $n = 7$ , 8.6%), which is the same number and percentage as those considered to be at ‘high risk’ for alcohol addiction.

**Table 7: Categories of drinking based on the AUDIT**

	<i>n</i>	%
<i>Safe</i>	51	63.0
<i>Hazardous</i>	16	19.8
<i>Harmful</i>	7	8.6
<i>Dependent</i>	7	8.6
<b><i>Total</i></b>	<b>81</b>	<b>100.0</b>



As the data for the AUDIT scale were not distributed normally, the Mann-Witney U test was used to investigate difference between males and females. It was noted that alcohol consumption by males and females differed significantly ( $U = 441.0, p = 0.033$ ). As such, males can be said to use more alcohol (Mean rank = 49.45) than females (Mean rank = 37.10). As a means of investigating the difference between race groups on the AUDIT scale, the Mann-Whitney U test was used as the data were not normally distributed. Based on the results of the Mann-Whitney U test, it was found that alcohol consumption did not differ significantly between African students and White students ( $U = 677.500, p = 0.978$ ), and neither did it differ between Black (African, Coloured, Indian, and Mixed-race) students and White students ( $U = 808.500, p = 0.913$ ).

Based on the outcome that data for the AUDIT scale were not normally distributed, in order to investigate whether there were any significant differences in the alcohol consumption levels of participants based on place of residence, the Kruskal Wallis<sup>8</sup> test was used. It was identified that there was no significant difference present in the alcohol consumption levels for the three different residence options;  $H(2) = 4.014, p = 0.134$ .

#### **4.3. Correlation analysis**

To identify significance between variables of the current study, a correlation matrix of variables was created. Correlation analysis by way of Spearman's rank correlation coefficient ( $\rho$ ) was used to discern the strength and direction of the relationship between academic stress, perceived stress and alcohol use, if any (Levin & Fox, 2014; Pallant, 2011). The ( $r$ ) between 0

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<sup>8</sup> As a nonparametric test, the Kruskal-Wallis test is used when the assumptions of one-way ANOVA are not met (Newton & Rudestam, 2013). The test is used in the comparison of two or more independent samples, of either equal or different sample sizes (Brown & Forsythe, 1974). Furthermore, dependent variables – continuous or ordinal – can also be assessed.

and 1 is indicative of a positive relationship and (r) between -1 and 0 is indicative of a negative correlation.

#### **4.3.1. Correlation between scales**

As the data violated some of the stringent assumptions of Pearson's  $r$  (i.e. the AUDIT data was not normally distributed), Spearman's rank correlation coefficient ( $\rho$ ) was used to determine the relationships between 1) perceived stress and alcohol consumption; and 2) academic stress and alcohol consumption.

There was no significant relationship between perceived stress and alcohol consumption,  $r(81) = 0.194$ ,  $p = 0.082$ . There was no significant relationship between academic stress and alcohol consumption,  $r(81) = 0.099$ ,  $p = 0.380$ . Table 8 below, presents the correlations among the primary variables. A significant and positive Spearman's correlation was calculated between academic stress and perceived stress,  $r(81) = 0.480$ ,  $p = 0.000$ . Although a positive Spearman's correlation between academic stress and perceived stress is indicative of a significant Pearson's correlation, neither the strength nor the direction of the correlation can be inferred (Hauke & Kossoski, 2011).

**Table 8: Correlations matrix of academic stress, perceived stress and alcohol use**

	<i>ASS</i>	<i>PSS</i>	<i>AUDIT</i>
<b><i>ASS</i></b>			
<i>Correlation Coefficient</i>	1.000	.480**	.099
<i>Sig. (2-tailed)</i>	-	.000	.380
<i>n</i>	81	81	81
<b><i>PSS</i></b>			
<i>Correlation Coefficient</i>		1.000	.194
<i>Sig. (2-tailed)</i>		-	.082
<i>n</i>		81	81
<b><i>AUDIT</i></b>			
<i>Correlation Coefficient</i>			1.000
<i>Sig. (2-tailed)</i>			-
<i>n</i>			81

\*\* . Correlation is significant at the 0.01 level (2-tailed). ASS: Academic Stress Scale; PSS: Perceived Stress Scale; AUDIT: Alcohol Use Disorder Identification Test

Therefore, as seen in table 9 below, Pearson's correlation was calculated for academic stress and perceived stress to determine the nature of the relationship that exists between the two variables. A moderate, positive correlation was found to exist between academic stress and perceived stress ( $r = 0.518$ ,  $n = 81$ ,  $p < 0.01$ ).

**Table 9: Correlations matrix for academic stress and perceived stress**

	<i>ASS</i>	<i>PSS</i>
<b><i>ASS</i></b>		
<i>Pearson correlation</i>	1.000	.519**
<i>Sig. (2-tailed)</i>	-	.000
<i>n</i>	81	81
<b><i>PSS</i></b>		
<i>Pearson correlation</i>		1.000
<i>Sig. (2-tailed)</i>		-
<i>n</i>		81

\*\* . Correlation is significant at the 0.01 level (2-tailed). ASS: Academic Stress Scale; PSS: Perceived Stress Scale; AUDIT: Alcohol Use Disorder Identification Test

#### **4.4. Conclusion**

The results of the current study indicated moderate levels of both academic stress and perceived stress experienced by the sample of second year university students. Significant differences in experiences of stress – academic and perceived – and alcohol use was noted between race groups and gender. The vast majority of participants reported current alcohol use, with some students falling into the category of harmful and hazardous use. However, it must be noted that the quantity and frequency of alcohol use varied. A relationship between academic stress and alcohol use was not found in the current study; however, a significant relationship between academic stress and perceived stress was identified, suggesting the experiences of general life stress impacts on a student's levels of academic stress and vice versa.

**CHAPTER FIVE****DISCUSSION****5. Introduction**

The experiences of academic stress among university students is considered normal and, as with various other forms of stress, can be overcome by utilizing appropriate coping strategies (Snehaja & Mani, 2016). However, an individual's reaction to a stressful situation and the type of coping strategy utilized is subject to number of person specific factors (Renk & Smith, 2007; Hicks & Heastie, 2008). In some instances, some students have been found to manage academic stress through the use of alcohol (Welle & Graf, 2011; Mostafei, 2012). As such, the central assumption of the tension-reduction theory has been shown through past research; whereby, alcohol consumption has been used as a means to escape from and diminish the negative cognitions and emotions brought on by the demands of an academically inclined context (Armeli et al., 2000; Backer-Fulghum et al, 2012). A number of international and local studies have identified early adulthood (ages 18 to 25) as a period of increased alcohol use (Muthén & Muthén, 2000; Kuntsche et al., 2004) and as the age group most prevalent to heavy drinking behaviour (Ham & Hope, 2003; Peltzer et al., 2011). More than three quarters of the sample (n = 63, 77.8%) for the current study were found to fall between the ages of 18 and 21 years. In terms of alcohol use, a significant portion of the sample (n = 64, 79.0%) reported current alcohol use, of which a small number (n = 7, 8.6%) were identified as being "high risk" for alcohol dependency. Although various studies investigating alcohol use patterns and drinking behaviours of university students have been carried out in South Africa (Young & de Klerk, 2008; Smit et al., 2009; Kyei & Ramagona, 2013), a limited number of studies pertaining to the association between academic stress and alcohol use among the university student population were noted.

The current study investigated the relationship between alcohol use in relation to experiences of academic stress in a population of second year university students attending a South African university. Based on international and local literature reviewed, a strong, positive correlation between academic stress and alcohol use was expected from the university sample. Furthermore, the students' experiences of academic stress and levels of alcohol use were explored in terms race, gender and place of residence.

### **5.1. Academic stress and alcohol use in the student population**

The experience of academic stress is considered to be a major contributory factor toward alcohol use amongst university students (Mphele et al., 2013; Tivolacci et al., 2013). In the current sample, it was noted that almost half of the students sampled scored within the moderate range for academic stress ( $n = 40, 49.40\%$ ), corroborating results seen in a number of studies on academic stress conducted within similar populations (Wilks, 2008; Prabu, 2013; Dhakal, 2013). The results obtained from the current study identified just under a quarter of the sample ( $n = 20, 24.70\%$ ) as having scored within the high range of academic stress; placing them at greater risk of anxiety, depression, substance use and suicidal ideation (Gellman & Turner, 2013; Dhakal, 2013; Nandamuri & Gowthami, 2011; von Oncuil, 1996; Khan & Alam, 2015).

Alcohol use, in terms of frequency and quantity, is influenced significantly by an individual's year of study and age (Ham & Hope, 2003); with first year university students (Bosari & Carey, 2006; Morutwa & Plattner, 2014; Lategan et al., 2017) and those between the ages of 18 to 25 (Muthén & Muthén, 2000; Kuntsche et al., 2004; du Preez et al., 2016) being the most vulnerable. Consistent with past and current literature, carried out in both international

and local settings (Tavolacci et al., 2013; du Preez et al., 2016; Tesfai, 2016; Young & de Klerk, 2008), more than three quarters of the students sampled reported continued alcohol use (n = 64, 79.0%), while less than a quarter reported having never consumed alcohol (n = 17, 21.0%). The results obtained from the AUDIT demonstrate the prevalence of alcohol among the population sample and suggest that alcohol use may be a cause for concern. By separating the scores into key categories, the researcher sought to determine the degree of risk the participants fall into. It was identified that more than half of the sample are considered to be 'low risk' (n = 51, 63.0%), with a small percentage of the sample (n = 7, 8.6%) being considered 'high risk' for alcohol addiction/dependency.

Although only a small percentage were found to be at high risk for alcohol dependency, excessive alcohol use and a dependency on the substance can impact negatively on an individual's personal and social functioning (American Psychiatric Association, 2013); often times with symptoms manifesting in a cognitive, behavioural and/or physiological form. Furthermore, a number of psychological symptoms taking on the presentation of depression, anxiety and insomnia, have been associated with patterns of heavy drinking. With regard to social functioning, excessive alcohol use has been identified as a main contributor to increased levels of absenteeism from the workplace, low levels of productivity and withdrawal from social interactions (Goh & Agius, 2010; Smith & Randall, 2012). Those students identified as 'high risk' for alcohol addiction have reported high levels of alcohol use, which has been linked to increases an individual's predisposition (or biological vulnerability) to mental illness and the emergence of psychological symptomatology (Gellman & Turner, 2013).

Based on the scales used in the study, high rates of alcohol use and moderate rates of academic stress were identified in the population of second year university students. However, in terms of the results established between academic stress and alcohol use, the current study

delineates from the literature reviewed and does not corroborate findings of any significant correlations between academic stress and alcohol use (of either a positive or negative nature). Similarly, no significant correlations were identified within the sample of second year students pertaining to perceived stress and alcohol use.

Although no correlations were found, one can hypothesise that university students make use of other coping mechanisms to manage their experiences of general life stress and academic stress. The notion that alcohol use has become a normalised part of university culture (du Preez et al., 2016) might impact on an individual's capacity to determine the function alcohol use serves in their life – a social practice or defence against stress related symptoms. Similarly, early exposure to alcohol use within the family and social context has further normalised the use of alcohol. In the South African context, one where the expression of emotions and difficulties amongst males is considered a weakness (Meyer, 2017; Nortje & Albertyn, 2015), it is possible that an individual's reaction to stressful situations are tailored to individual and cultural practices. Furthermore, as noted by du Preez et al. (2016), reducing tension related to stress is not necessarily the primary reason behind student's alcohol use; although, it is posited that an element of tension reduction might be expected. Conversely, increased levels of stress may be the result of alcohol use problems (Young, Orei & Knight, 1990), which in turn leads to the further impairment of the individual's functioning within the social, occupational and/or physical domains.

As noted by Young, Orei and Knight (1990), a pure tension-reduction conceptualisation anticipates a uniform increase in alcohol use that is directly proportionate to an individual's induced level of stress. Therefore, the results of the current study are in contrast to the core assumptions made by the TRT due to the absence of correlations between the stress and alcohol



use variables. However, one needs to remain cognisant of the fact that the students' motivations for consuming alcohol and their expectations pertaining to the effects of alcohol were not central to the current study, as the researcher sought only to explore the relationship between academic stress and alcohol use. Future research into students' motivations for drinking and alcohol expectancies may yield useful and contextually relevant results. Thus, in doing so, allowing for the further exploration of the applicability of the TRT in understanding the relationship between stress and alcohol use.

Through the use of Pearson's correlation, a positive, moderate relationship between academic stress and perceived stress was identified. In the current study it was demonstrated that almost two thirds of the sample ( $n = 52, 64.2\%$ ) reported moderate levels of perceived stress, with a quarter of the sample ( $n = 21, 25.9\%$ ) reporting high levels of perceived stress. As such, the results suggest that the degree to which contextual situations in a student's life – general life stressors – are perceived as stressful and uncontrollable, is related to a student's experiences of academic stress (Cohen, Kamarck & Mermelstein, 1983). Thus, it can be substantially inferred that an increase in one results in an increase in the other.

The correlation identified between perceived stress and academic stress levels was to be expected as the scales measure different forms of the same phenomenon, stress. From the results, it can be inferred that students who report high levels of general life stress are more at risk for higher levels of academic stress. Managing general stress can result in the depletion of an individual's psychological and physiological resources needed to cope with academic stressors; and as such, can result in increased levels of academic stress. It can be substantially inferred that general life stress is a good predictor of academic stress. Therefore, the recommendation that stress measures be implemented in high schools can be made; whereby,

interventions in the form of workshops and guidance (Bhargava & Trivedi, 2018) can be offered to learners reporting high levels of stress. In doing so, early intervention can aid in the development of positive/adaptive stress management skills prior to entry into the tertiary education system (Damodaran & Paul, 2016; Huli, 2014).

## **5.2. The impact of race, gender and place of residence on academic stress and alcohol use**

Literature has shown that stressful situations within the context of tertiary education are perceived, experienced and responded to differently by students. As such, a number of diverse factors impact the individual's unique experiences. Race (Ham & Hope, 2003; Knight et al., 2002), gender (Baker, 2003; Lee et al., 2002) and place of residence (Young & de Klerk, 2008; McCabe et al., 2005) have been identified as some of the factors that may hold influence over an individual's experience of stress, how they respond and the coping strategies they employ. Results obtained from the current study depicted a number of interesting and notable differences between the groups identified; however, as the sample was not large enough substantial inferences could not be made.

### **5.2.1. Academic stress and alcohol use between different race groups**

The population spread among the second year students sampled depicts a balance between the black population (n = 34, 42%) and the white population (n = 40, 49.4%). For the current study, analysis was done in two manners. The first set of analyses saw the removal of the Coloured, Indian and Mixed-race participants due to the fact that they represented a small number in the overall sample, which could have resulted in a skewed data set. The second analysis saw the inclusion of the Coloured, Indian and Mixed-race participants by collapsing

the categories of race into two groups, namely: 'Black' comprised of African, Coloured, Indian, and Mixed-race participants; and 'White' comprised of White participants.

Race was identified as having an effect on the overall experience of academic stress, as African students noted experiencing higher levels of academic stress than White students. Similarly, it was found that Black (African, Coloured, Indian, and Mixed-race) students reported increased levels of academic stress in comparison to White students. Previous studies investigated both the racial and socioeconomic differences in the manifestation of stress in an adolescent population (Finkelstein et al., 2007; Morton et al., 2014; Goodman et al., 2005). Finkelstein et al. (2007) and Goodman et al. (2005) reported greater levels of stress in Black students and adolescents from a low socioeconomic background. The results of the current study indicates differences in the experiences of both general life stress and academic related stress between students from different race groups. It can be inferred that an individual's interpretation of stress and what is considered stressful, is subjective to the individual's cultural, ethnic, and family narrative. The current study did not explore the impact of factors, such as socioeconomic status, being a first-generation student and academic preparedness (Finkelstein et al., 2007; Morton et al., 2014) on students' experiences of academic stress.

No significant differences in patterns of alcohol use was found between different race groups, which is contradictory to literature on alcohol use patterns among race groups. For example, Young and de Klerk (2009) identified white students as being more likely to use alcohol compared to African, Indian, Coloured or Mixed-race populations. However, although the data obtained from the current study differs to that presented in the literature, it must be acknowledged that the small sample size and the over representation of females within the sample may have had an impact on the results obtained. Furthermore, the results might indicate

the presence of a social desirability bias among the population of second year university students, whereby, students did not disclose their drinking patterns and behaviour in an honest manner. Resultantly, an under-reporting of alcohol use is possible (Boniface, Kneale & Shelton, 2014) and may be the case in the current study. As identified by a number of studies, a need exists for research pertaining to the coping strategies employed by different races and ethnic groups to manage stress, especially in the university population (Wei et al., 2010; Hystad et al., 2011; Myers, 2009).

### **5.2.2. Gender differences in academic stress and alcohol use**

The differences found between female students (n = 58, 71.6%) and male students (n = 22, 27.6%) holds substantial value for the current study as significant differences were noted between gender in experiences of academic stress and levels of alcohol use.

From the results obtained, it was found that gender has an effect on academic stress, as females scored higher on the academic stress scale than their male counterparts. Consistent with current literature (Dhakal, 2013; Misra & Castillo, 2004; Gyawali, 2013), the results from the current study support the findings that female students experience and report greater levels of academic stress. Past research shows that, in comparison to male university students, females reported feeling more stress in a number of stressful situations, experiencing greater levels of frustration, self-inflicted stress and academic related pressures (Abouserie, 1994; Dusselier et al., 2005; Pierceall & Keim, 2007; Soderstrom et al, 2000; Misra et al., 2000). However, females, especially students, have been identified as being more exposed to stress and are more willing than their male counterparts to seek help and engage with others about their concerns.

It was noted by Calvarese (2015) that females reacted to stressors by exhibiting increased levels of anxiety, fear, and depression that resulted in help seeking behaviour. Females actively seek out social support from family and close friends. Identified as being closely attuned to their emotional needs, females are more willing to express their feelings to others (Calvarese 2015; Cooper et al., 1992). Males, on the other hand, seek to maintain a sense of masculinity that has been ingrained into their social identity through a society and culture that reinforces the notion that “men do not cry” and any deviation is considered a sign of weakness (Meyer, 2017). As such, males externalise unwanted feelings or emotions – including those related to stress – in an attempt to disown and avoid the negative feelings (Nortje & Albertyn, 2015; Cooper et al., 1992).

The current study identified a significant difference in the level of consumption by males compared to females; and as such, male students are said to use more alcohol. Key findings in the literature reviewed were that rates of alcohol use were highest in males compared to females (Ham & Hope, 2003; Knight et al., 2002), which corroborate the findings of the current study. The results obtained in the current study are to be expected. Both biological and socio-cultural factors have been identified as role players in the differences exhibited in male and female drinking patterns and behaviours (Lategan et al., 2017).

Biologically, females have been considered more vulnerable to the negative effects of alcohol use than males (Frezza et al., 1990). Resultantly, tolerance levels vary to a great extent between males and females due to distinct biological differences that impact on overall alcohol absorption and metabolism (Taylor, Dolhert, Friedman, Mumenthaler & Yesavage, 1996; Wilsnack, Vogeltanz, Wilsnack, & Harris, 2000; Lategan et al., 2017). However, as noted by Wilsnack et al. (2000), socio-cultural factors in conjunction with biological factors provide a

holistic view of the differences in alcohol use between genders. As females are biologically unable to consume more alcohol than males, it is considered socially unacceptable for females to use alcohol more frequently and in higher quantity than males (Wilsnack, Wilsnack, Kristjanson, Vogeltanz-Holm & Gmel, 2009). As such, biological factors have shaped societal views of acceptable drinking patterns and behaviours of males and females (Lategan et al., 2017). Thus, although making up the majority of the sample population and being identified as current drinkers in the current study, it is possible that females may practice safer alcohol use than males; which could explain how a large portion of the sample's drinking behaviour was considered low risk (n = 51, 63.0%).

Furthermore, alcohol use, when in excess, has been reported to serve a defensive function as it relieves stress on a short-term basis (Lingiardi & McWilliams, 2017). Therefore, in a society that does not condone the expression of emotions in males (Meyer, 2017), males externalise their feelings and employ more problem-focused and avoidant/disengagement coping strategies; placing them at greater risk for excessive alcohol use.

### **5.2.3. The impact of place of residence on academic stress and alcohol use**

A number of scholars writing within the fields of academic stress, substance use and peer influence, have acknowledged the importance of 'place of residence' as a key factor impacting on an individual's experiences. As illustrated in the results, just over a third of the sample live at home under the supervision of family members (n = 28, 34.6%), whilst almost half reported having independence (n = 34, 41.9%) – rent/share accommodation, live in a commune or have their own house. The remaining participants (n = 19, 23.5%) reside in one of the various university residences.

In the current study, no significant difference in academic stress was found in relation to place of residence. No significant differences were identified between place of residence and alcohol use, which delineates from international and local studies (Young & de Klerk, 2008). A number of studies have reported high levels of alcohol use among university students in both social/communal living areas and larger social gatherings (McCabe et al., 2005). Differences in patterns of alcohol use have been found between universities that offer on-site residence and those that do not, with higher drinking levels being reported for those universities with on campus accommodation (Presley et al., 2002). Differences in the results obtained in the current study compared to others (McCabe et al., 2005; Presley et al., 2002) may be as a result of the university location and the traditions present at the elected university. Internationally, university culture and drinking culture are synonymous with one another. International universities are characterised by a unique environment tailored to offer students independence through the absence of parental supervision, increased social homogeneity and the availability of alcohol (Lorant, Nicaise, Soto & d'Hoore, 2013). 'Hazing' practices, fraternity parties and folklore traditions that form part of student organisations account for high levels of alcohol consumption among the international population of university students that reside both on and off university campus (Lorant et al., 2013). It is possible that differences in tradition, culture and university policy may account for the differences found in the current study compared to international studies (McCabe et al., 2005).

### **5.3. Limitations**

Limitations of the study should be noted. Firstly, as with a large majority of surveys, the current study was reliant on self-reported data, which opened the study to the possibility of the inaccuracy of participants. As such, the responses of the participants may have been biased toward the varying perceptions or behaviour promoted by the social construct they adhere to.

For the data collection method, convenience sampling was used in conjunction with an online distribution method and may have limited both the number of responses and overall generalizability of the study. Furthermore, the results and conclusions of the current study are based on a nonprobability sample and, therefore, findings cannot be reliably generalized beyond the sample of second year university students drawn for the study, as a number of biases might inadvertently be present. A further limitation was that of the limited sample obtained (Schaeffer, Dykema, Elver & Stevenson, 2008). The small sample size restricted the statistical power of the study; and as such, the results suffer from both sample error and sample bias. As such, the results of the current study are not as reliable as those coming from samples of 300 or more participants.

#### **5.4. Recommendations**

Future research should consider the use of paper-based questionnaires as a means of avoiding a lack of participation. Within current literature pertaining to academic stress and alcohol use (Welle & Graf, 2011; Busari 2012; Sreeramareddy et al., 2007), scholars have made use of the paper-based format and obtained data of a generalizable nature that is representative of the population sampled. Further, demographic characteristics such as race and gender were shown to have an impact on the students' experiences of academic stress and their use of alcohol. However, most of the sample were identified as 'African' or 'White' and were limited in number; thus, oversampling among the Coloured, Indian, and Mixed-race groups would allow for a more racially diverse sample. A larger and more racially diverse sample size drawn from other faculties would allow for substantial inferences to be made; and would allow for the generalizability of results to extend beyond the population of second year university students from the Humanities faculty. The design of the study is cross-sectional and did not allow for longitudinal associations between academic stress and alcohol use to be made. Future



research should consider longitudinal designs in order to explore the nature and extent of the co-occurrence of academic stress and alcohol use throughout students' tenure at university. Doing so could aid in both the amendment and development of guidelines and policies that could be implemented to support university students.

### **5.5. Conclusion**

The current study sought to identify a relationship between academic stress and alcohol use among second year university students reporting on the experiences of their first year study. Through the distribution of surveys via an online system, participants answered questions pertaining to their experiences of stress and alcohol use. The current chapter provided a discussion of the research findings and compared them with those of past research. The chapter included an in depth look into the challenges faced by the researcher, the disclosure of the limitations of the study and recommendations for future research.

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**APPENDIX A**  
**RESEARCH APPROVAL**



**APPENDIX B**  
**CERTIFICATE OF EDITING**