Title: Attitudes of third year psychology students at the University of Limpopo (Turfloop Campus) towards the use of marijuana.

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Declaration

With the submission of this mini-dissertation, I declare that the entirety of this work is my original work. I am the sole author thereof, unless otherwise stated. I have referenced all sources, and to my knowledge, have not plagiarised.

Signature_____Date_____

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Abstract

A study investigating third year psychology students' attitudes towards the use of marijuana at the University of Limpopo was undertaken. The study was quantitative in nature and used a cross-sectional survey design. A random sample of 165 third year psychology students was used. The Health Belief-Model was used as a theoretical framework, which guided the study and the reporting of the research results. The self-report questions were made up of several standardised questionnaires. Quantitative data was analysed using descriptive statistics namely, frequency tables and figures as they gave a clear overall picture of the data. The Pearson correlation coefficient was used to determine if there were any significant differences between male and female participants in terms of knowledge and attitudes. The results of the study found that overall respondents had negative attitudes toward marijuana use. The study also indicated that there were no gender differences in attitudes toward marijuana use. In terms of the Pearson correlation coefficient a weak positive relationship was found between self-efficacy and attitudes toward marijuana use amongst third year psychology students. The study recommended that workshops are organised to share knowledge about marijuana and its effects.

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CHAPTER 1: INTRODUCTION

1.1 Introduction to the research

The legal status of marijuana in South Africa has changed over the last two years (2017-18). On March 2017, presiding Judge Dennis Davis of the Western Cape High Court ruled that any law prohibiting the use and cultivation of marijuana by an adult in a private setting was unconstitutional and therefore invalid. On these grounds violation of the constitutional right to privacy (of marijuana use) could not be justified (Moagi, 2018). Just before this mini-dissertation was sent out for assessment the Constitutional Court of South Africa, the country's highest court, on Tuesday 18/09/18 handed its judgement on the aforementioned matter down and ruled that personal use of marijuana (by adults) is no longer a criminal offence (Head, 2018). As this is a new ruling, it is unclear of the future ramifications the ruling holds.

"Marijuana also known as *weed, herb, pot, grass, bud, ganja and Mary Jane* is a greenish-gray mixture of dry leaves and flowers of *Cannabis sativa,* the hemp plant" (National Institute on Drug Abuse [NIDA], 2017, p. 9). In South Africa, it is commonly known as Dagga. Many people use marijuana because they feel that marijuana is derived from the earth and is thus a natural product which cannot do individuals harm (NIDA, 2017). White (2015) states that many people believe that because marijuana is a natural product it has no harmful physiological and psychological impact, which is incorrect.

The widespread use of marijuana in young people is a worldwide phenomenon. According to World Health Organization (WHO, 2016), in 2016 an estimated 181.8 million people aged 15–64 years used cannabis for non-medical reasons. The regions with the highest consumption and production of marijuana are the United States of America (USA) followed by Africa (United Nations Office on Drugs and Crime [UNODC], 2016). According to Davis et al. (2016), drug use in South Africa has increased as compared to the 1990s. The authors further state that this is perpetuated by political, economic and social developments causing young people in these regions to be vulnerable to drug use. South Africa has a long history of marijuana use (South African National Cannabis Working Group [SANWG], 2013)**.** The use of marijana is more popular among teenagers in South Africa than hard drugs such as heroin (Moodley, Matjila, & Moosa, 2012).

According to Simango (2014), marijuana is readily available in this country, even to school-age learners.

According to Johnston, O'Malley, Bachman and Schulenberg (2012), marijuana is the most common illicit drug on college campuses in the USA. Its use amongst college students is rising and impacts negatively on academic achievement (Suerken et al., 2016). According to Arria (2014), the impact of marijuana use is significantly and positively associated with fewer hours of studying, a higher percentage of missed classes and delayed graduation.

1.2 Operational definitions

1.2.1 Marijuana: In this study, marijuana refers to the dried leaves, flowers, stems, and seeds from the hemp plant, cannabis sativa. The plant comprises of mind-altering chemical delta-9-tetrahydrocannabinol and other associated compounds (Borcherding, 2016).

1.2.2 Attitudes: Maio and Haddock (2014) define attitudes as a general and enduring negative or positive feeling or belief about an object, issues or a person. In this study attitude refers to the viewpoint of third year students towards marijuana use.

1.3 Research problem

Marijuana is the most frequently used illicit drug amongst the youth in South Africa (UNODC, 2012). Amongst university students, there is a link between marijuana use and lower grade averages (Garner, 2016; Moodely et al., 2012). According to (NIDA, 2017), research indicates that marijuana has a negative effect on attention, memory, and learning. This can last for days or weeks after the acute effects of the drug wear off. Considerable evidence suggests that students who smoke marijuana have poorer educational outcomes than those that do not (Arria, 2014; Moodley et al., 2012).

In the current global context marijuana is the most widely used illicit drug among university students (Garner, 2016; Simango, 2014). Much of the literature addressing marijuana focuses on measuring its detrimental effects in users (Garner, 2016). Despite years of research on marijuana and its negative effects on the human body, a gap in the literature exists. This gap is assessing the

attitudes of students towards marijuana use. No study on this topic could be found at the University of Limpopo. This study seeks to explore the attitudes of students towards marijuana use at the University of Limpopo.

1.4 Purpose of the study

1.4.1 Aim of the study

To determine the attitudes of third year students at the University of Limpopo towards marijuana use.

1.4.2 Objectives of the study

Objective 1: To establish attitudes that third year students at the University of Limpopo hold towards marijuana use.

Objective 2: To explore any differences towards marijuana use among male and female third year students at the University of Limpopo.

Objective 3: To ascertain any relationship between the self-efficacy of students and their attitudes towards marijuana use at the University of Limpopo.

1.4.3 Research hypotheses

Hypothesis 1: Male students will be more positive in their attitude to marijuana use than female students at the University of Limpopo (Turfloop Campus).

Hypothesis 2: There is no relationship between the self-efficacy of students and their attitudes (negative or positive) towards marijuana use at the University of Limpopo (Turfloop Campus).

1.5 Significance of the study

The study will give insight into the attitudes of third year psychology students towards the use of marijuana at the University of Limpopo. The proposed investigations sampling method is random sampling thus findings can be generalised to all third year students at the University of Limpopo. The findings that arise out of the proposed study may help in providing interventions in terms of marijuana use and knowledge at the University of Limpopo.

1.6 Summary

Chapter one introduced the study by providing an introduction, research problem, aim and objectives, operational definitions and significance of the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Chapter two consist of literature which gives an overview of research that has been detailed in recent years on studies similar to this one. This chapter begins with a general overview of the available literature regarding conflicting views on marijuana. Included in the chapter is also the negative and positive effects of marijuana, educational outcomes of smoking marijuana followed by global literature related to marijuana and the neurological impact of marijuana.

2.2 Conflicting views of marijuana use

There are conflicting views about marijuana use. This debate has been ongoing since the 1960s and it has recently become a popular topic in the agendas of many countries. According to Isa (2017), recently countries such as Canada have legalised its use. Furthermore, the author states that in recent years, there is no plant that has attracted more controversial arguments than marijuana. Some proponents advocating in favour of marijuana state that farming it can lead to employment and income benefits (for a country's Gross Domestic Product). However, some state that marijuana use facilitates lawlessness. Despite these arguments the growth, distribution and sales of marijuana continue to flourish globally (Ayenigbara, 2014). According to Babalola, Otu, Oluwaranti and Abayomi (2017), the arguments associated with the use of marijuana vary from legal, political to ethical and moral issues. Isa (2017) indicated that some views are biased towards the economic value of the herb but do not take into account the negative effects of marijuana as recently the beneficial medical effects of the drug are over-reported.

According to White (2015), it has been argued that marijuana has the ability to treat a number of medical conditions including nausea, glaucoma, pain, and multiple sclerosis as well as specific cancers. Many of these factors, no matter how contradictory or controversial, influence positive opinions about it. The authors states that one key factor that can assist with establishing sound perceptions, attitudes and judgment about the harmful effects of marijuana use is education. Burnhams (2016) agreed and pointed out that marijuana use decreases as an individual's level of

education increases. In South Africa, drug use amongst the youth is high and is associated with positive attitudes about its usage (Brook, Pahl, & Brook, 2006). Accordingly, the usage of drugs such as marijuana, cocaine, and Tik in South Africa doubles the world average (United Nations World Drug Report [UNWDR], 2014). D'Amico, Tucker, Pedersen and Shih (2017), report that marijuana is highly regarded amongst the youth, especially teenagers (Department of Social Development, 2013). Generally, youth in South Africa spend a significant amount of their money purchasing drugs particularly, marijuana (Christian Addiction Support, 2016). This addition support website indicates that marijuana is among the top three drugs used by 86% of people suffering from drug abuse globally in 2012. Marijuana, cocaine and amphethemine stimulants respectively, are the most consumed drugs among the youth in South Africa. Of the three drugs, marijuana consumption tops the list (UNWDR, 2014). Health experts have concerns that this high drug abuse among youth in the country is likely to stifle their potential, which has negative implications to the whole country. According to Burnhams (2016), drug abuse is higher amongst males as compared to females.

Sehularo (2016) indicated that in the last five years, there has been an increasing number of campaigns for the legalisation and de-criminalisation of marijuana throughout the world, mainly in America and South Africa. In addition, Sehularo (2016) reported that during this period, in particular, the campaigns have grown, but have had mixed results in both countries. The campaigns have also been controversial and have often been the subject of heated debates between the two countries. Regardless of differing opinions on marijuana, there has been progress towards understanding and legalising the herb in the past two years in South Africa (Jake, 2017). The same study indicated that the debate has brought forth mixed emotions, with some organisations excited about the possibility of legalising its use whilst others, especially traditional community leaders, condemn its proposed legalisation (Sehularo, 2016).

According to Jake (2017), in South Africa the legalisation of marijuana started gaining momentum and attention in 2010 gaining momentum in 2014 onwards. Furthermore, since 2010, the discussion has mostly been about the legalisation of marijuana for medicinal and recreational purposes. Recently, another motion has surfaced where proponents advocate for the legalisation of home-use of marijuana. This has triggered serious a debate among policy makers, nonprofit organisations and medical professionals which has resulted in a series of court ruling about the

herbs use. Moreover, one of the outcomes of these debates includes the introduction of the Medical Innovation Bill which permits the use of, and prescription of, marijuana by medical doctors for certain ailments. On that note, South African Medicines Control Council (SAMCC), a board that regulates the production, manufacture and sale of drugs has provided guidelines where individuals or companies seeking to grow or process marijuana are required, by law, to obtain a permit before they can commence production. It states that applicants may seek to grow, extract and test cannabis and to manufacture medicines containing cannabinoids if certain conditions are met. In order to be granted a permit to perform these functions, applicants require permission not only from the SAMCC but also from the Director General of Health in the country. Additionally, other prominent organisations such as the South African Central Drug Authority (SACDA) have also advised a shift in government policy towards marijuana use. The organisation recommended that the government should adopt a balanced policy (middle-ground approach) where some use of marijuana is legalised while some remain criminalised.

Minnaar (2015) reports that the South African authorities have consistently opposed the legalisation or decriminalisation of marijuana although its decriminalisation globally has become more common as it considered less harmful than drugs such as Heroin and Cocaine. D'Amico et al. (2017) argue that legalising marijuana is a risky initiative as the young, who use it the most, are still developing cognitively. According to Aynigbara (2014), marijuana produces a sequence of different physiological and neurological effects which can have harmful effects on brain development. Additionally, it is reported that the drug heightens mood thus if an individual is prone to aggression he or she will become more aggressive. Furthermore, that this mood heightening can lead to violent acts of criminality.

Garner (2016) argues that a substance that is used illegally brings with it the negative associations and stigmatisation which tend to lessen understandings of its usefulness in the medical field. However, globally it has been found that legislators and judges have difficulty in rationally justifying the ban of marijuana use.

Carah et al. (2015) stated that proponents of its decriminalisation argue that its legalisation would release money (billions of dollars) that is now used to prosecute users and provide billions in tax revenue and release many resources used by law enforcement. These could then be used to prevent more serious crimes. On the other hand, critics argue that costs could increase with the legalisation

of the herb. Many believe that financial consequences may involve increased drug education costs, rehabilitation centres and drug treatment programmes (Aljabri, 2016). It is estimated that nine percent of marijuana users become addicted to it and need rehabilitation. Opponents note that as it causes intoxication it is involved in road vehicle accidents (RVA) and crime related activities.

2.3 The negative effects of marijuana use

According to Borcherding (2016), marijuana use has multiple harmful effects on the human body for instance, dramatic alterations in brain patterns, abnormal brain development and its users are prone to mental illness. Phillips, Phillips, Lalonde and Tormohlen (2015) reported that marijuana users experience poor psychomotor functioning and shortened attention spans as well as deficits in short-term working memory.

Smoking marijuana is linked to abnormalities of cell linings in the human respiratory tract which is associated with the increased risk of cancer and lung damage (Watson, Benson, & Joy, 2000). In support, NIDA (2018) reported that marijuana smoke irritates the lungs, and people who smoke marijuana present with similar respiratory diseases to those who smoke tobacco. These problems include daily coughing and an increased risk of lung infections for instance, pneumonia. Marijuana use is also associated with curtailed brain development (Brook et al., 2006). This can result in higher dropout and exclusion rates from school and tertiary institutions as a result of euphoria, distorted perceptions and difficulty in thinking and solving academic problems (Simango, 2014). It also affects how the brain builds connections between neural pathways which are needed for optimum cognitive functioning (NIDA, 2018).

Regular marijuana use is linked with increased risk of schizophrenia and is often comorbid with depression, bipolar disorder and anxiety disorders due to its biological effects on brain maturation (Meyer & Sereen, 2017; Simango, 2014). There are also links between marijuana use and other mental health problems such as suicidal thoughts and personality disturbances (Masike & Mofokeng, 2017). Acute marijuana intoxication is also known to cause both mood and perceptual changes for instance, emotions are blunted, perception of time is impaired and distorted spatial perception occurs. Wadieh, Adams and Brown (2017) state that the primary feature of the use of marijuana is the production of a euphoria effect, known as a 'high'. This 'high' ensues within

minutes of smoking the drug and then reaches a plateau, lasting two hours or more, depending on the dose. This is what is referred to as 'spacing out.'

According to Mujuru and Sekhejane (2014), the association between marijuana use and psychotic disorders has been studied extensively, with evidence suggesting that frequent users, and those who initiate its use at a young age, are at increased risk of developing these disorders as well as addiction to the drug. Marijuana intoxication can also simulate certain aspects of psychoses. These psychotic disorders often include strange thoughts, auditory hallucinations and inappropriate emotions. For instance, a psychotic individual may have the idea that other people are inserting ideas in their head. Auditory hallucinations (those the individual can hear) include hearing voices that do not exist. Inappropriate emotions can include smiling when an individual is scared or sad. Large doses of marijuana can induce similar symptoms, but the psychosis induced is not the same, or as long lasting, as those induced by psychotic illnesses such as schizophrenia (Earleywine, 2002). This is supported by Miller (2013) who notes that adverse effects of marijuana use include, impairment of short-term memory, inability to concentrate, poor coordination, increased heart rate, red eyes and paranoia. The effects of marijuana use on short-term memory are seen within 12-24 hours of use (Borcherding, 2016).

Volkow et al. (2016) postulate that both immediate and long-term exposure to marijuana hinders driving ability. It is commonly reported in the bloodwork of people involved in RVAs, including those that have fatalities. There is a link between high blood THC (Delta-9-tetrahydrocannabinol or THC, the active chemical component in marijuana) concentration and poor performance in controlled driving simulations, which is a good predictor of real-world driving ability. The overall risk of getting involved in an accident increases by when an individual drives a vehicle shortly after using marijuana.

Marijuana use has been found to be associated with unprotected sexual intercourse. This link between substance use and risky sexual behaviour(s) is stronger amongst younger people (Earleywine, 2002). Youth who smoke the drug frequently take health risks including, engaging in unprotected sex, sexual violence and having multiple sexual partners. These are all associated with unplanned pregnancies and the contraction of sexually transmitted infections (STIs). This is because young adults, who are under the influence of marijuana, have compromised negotiation

skills, thus increasing their vulnerability in terms of engaging in risky sexual behaviors (Simango, 2014).

According to Repp and Raich (2014), social elements and social context have a critical influence on marijuana use in a community. Neighborhood disorder, unemployment, and poverty play a role in the social norms for its use and abuse. At an individual level, coming from a socially disadvantaged group, having a lower socioeconomic position or being a student or unemployed are also associated with increased use of marijuana.

2.4 Positive effects of Marijuana use

According (Gopalan, 2017), despite decades spent in the search of clear evidence that marijuana is medically beneficial there is only moderate evidence proving such benefit, a situation that exists with many other medications and medical practices. Part of the attraction, according to the author, is the general view that marijuana is pleasurable and relaxing without the addictive properties of opioids and stimulants, as well as its ready availability and its wide social acceptance.

Scientists and researchers suggest that the marijuana plant has several chemicals that may prove beneficial for treating a range of illnesses, leading many people to argue that it should be made legally available for medical purposes. Its use shows positive effects on a variety of conditions including Alzheimer's Disease, Amyotrophic Lateral Sclerosis (ALS), chronic pain, Multiple Sclerosis, Diabetes Mellitus, Dystonia, Fibromyalgia, incontinence, gastrointestinal disorders and various cancers (United States Department of Justice, 2014).

Madras (2015) states there are other conditions that are positively affected by marijuana use which include atopic dermatitis, brain injuries, eating disorders, Epilepsy, Glaucoma, Huntington's Disease, neuromuscular disorders, Rheumatoid Arthritis, sleep disorders and Tourette's syndrome. According to Mujuru and Sekhejane (2014), the majority of African people use indigenous medicines for various sicknesses which includes the use of marijuana for instance, in treating cancers. Non-communicable diseases like cancer are on the rise amongst African people(s) which is linked to the rise in marijuana use.

The use of conventional western medicine as a modality of treatment represents a serious financial burden for many African governments, including South Africa. The majority of people in Africa

and South Africa do not have medical aids and use traditional medicines. Marijuana, like many other herbal medicines, has been scientifically proven to be effective in the treatment of a number of sicknesses yet it remains illegal in many countries (Mujuru & Sekhejane, 2014).

The major psychoactive compounds in marijuana (cannabis) are cannabinoids, the most significant of which is delta-9-tetrahydrocannabinol. The use of marijuana has increased in the United States of America (USA) with passage of medical marijuana laws in many states and its legalisation for recreational use in several states. In addition, the potency of marijuana has increased in recent years. Marijuana has been used for a variety of other medical conditions, including management of nausea and vomiting, appetite and immunologic stimulation in patients with HIV/AIDS, neurologic disorders, and pain relief (Albertson, Chenoweth, Colby, & Sutter, 2016).

According to Wilkinson, Yarnell, Radhakrishnan, Ball and D'Souza (2016), delta-9-tetrahydrocannabinol (THC), the active ingredient in marijuana, can prevent an enzyme called acetylcholinesterase from accelerating the formation of Alzheimer's plaques in the brain, as well as protein clumps that inhibit cognition and memory, more effectively than commercially marketed drugs. Wilkinson et al. (2016) assert that marijuana can play a critical role in controlling spontaneous seizures in uncontrolled epilepsy.

2.5 Educational outcomes of smoking (or imbibing) Marijuana

Volkow et al. (2016) states that during the late 19th century heavy marijuana use was associated with apathy, defined as reduced motivation for goal-directed behaviour in work or academic related spheres. However, it was only after the marked increase in cannabis use of the1960s that the motivational effects of chronic cannabis use were linked to impairments in learning and sustained attention. The term *cannabis-amotivational syndrome* was proposed and characterised as apathy and diminished ability to concentrate, follow routines, or an inability to successfully master new material.

Phillips, Phillips, Lalonde and Tormohlen (2015) report that academic problems and failure are compounded by marijuana use, especially in young adults as its use impairs vital cognitive functions. Students who use marijuana function at a cognitive level that is below their normal capability which can lead to academic failure. This interferes with their capability to achieve educational and life goals (Volkow, Baler, Compton, & Weiss, 2014; Simango, 2014).

Adu-Gyamfi and Brenya (2015) looked at the self-reported effects of marijuana use on both academics and students. Sixty-six percent (66 %) of the respondents stated that the use of the substance had positive affect on them while twenty-two (22 %) stated that the substance had negative impact. Those who self-reported a positive impact stated that they were able to learn for longer period and were able to retain that knowledge for longer. However, it is probable that these self-reported effects were due the users 'high,' and did not translate into academic achievements.

Adu-Gyamfi and Brenya (2015) also indicated that heavy marijuana smokers perceive their use of the drug as due to poor academic adjustment and resultant poor academic results. They were unable to fulfil their academic obligation because of heavy sleeping, loss of memory and coughing which made them unable to sit and learn for long periods. Furthermore, the authors found the use of marijuana was highly addictive and students who smoked it became 'hooked,' often leading them to academic failure and 'dropping out.' Some high school graduates do not achieve the grades needed in order to enrol in degree programmes and instead enrol in non-degree institutions, others delay enrolment in any type of learning institution or drop out of postsecondary programmes (Homel, Thompson, & Leadbeater, 2014).

According to Fergusson, Boden and Horwood (2015), the links between marijuana use and educational outcomes have several possible explanations. The first explanation is that the use of marijuana may have consequences for neurophysiological structure and functioning, compromising motivation and cognitive processes. The authors note that this has a growing evidence base related to the neurochemistry of cannabis and the developing brain.

The second explanation of the link between the use of marijuana and lower educational achievements is that the use of marijuana can introduce young people to social contexts in which anti-conventional behaviours are encouraged, and more normative behaviours related to educational achievement are seen as less attractive. It seems likely that the links between marijuana use and educational achievement and related outcomes reflect both the biologic and social factors' cumulative effects, which increase the vulnerability of marijuana users to underdevelopment, dependency and unemployment (Fergusson, Boden, & Horwood,2015).

According to Phillips et al. (2015) it is possible that academic problems and failure can be affected not only by the substance itself but also by other addictive processes. For instance, rolling the

marijuana into a cigarette shape so it can be smoked, this process in itself gives pleasure to the user. Active marijuana users have to maintain some degree of self-control over their use, and at times, must delay the use marijuana in situations where use is not acceptable (for instance, while in class). When considering the academic environment, it is possible that heavy users will struggle to perform as they are always thinking about their next 'fix'.

Increased cognitive effort associated with craving can interfere with other cognitively demanding tasks, such as focusing in class, reading comprehension, and managing professional goals. Craving can also lead to greater marijuana use, which can affect the academic performance of students and disrupt their ability to fully benefit from their studies (Phillips et al., 2015). According Bolin, Pate and McClintock (2017), one particularly important variable that has been largely ignored which impacts on overall academic performance is students not attending lectures.

Volkow, Baler, Compton and Weiss (2014), failure to learn at school, even for short or sporadic periods (a secondary effect of acute intoxication), will interfere with the subsequent capacity to achieve increasingly challenging educational goals. They state that this finding also explains the association between regular marijuana use and poor marks.

Early marijuana use is associated with impaired school performance and an increased risk of dropping out of school (Tshitangano & Tosin, 2016), although reports of shared environmental factors that influence the risks its use at a young age and dropping out of school suggest that the relationship may be more complex. Heavy marijuana use has been linked to lower income, greater need for socio-economic assistance, unemployment, criminal behaviour, and lower perceived satisfaction with life (Earleywine,2002).

2.6 Global literature related to marijuana use (including Africa and South Africa)

Marijuana use amongst students has become a global challenge (D'Amico et al., 2017). In most countries, marijuana intake is common amongst high school and university students. Heydari et al. (2015) reported that marijuana use is one of the most pressing problems amongst students in Iran. Heydari et al. (2015) state that university life is often associated with pressure and stress which forces some students to indulge in drugs such as marijuana in order to evade reality. Their study findings revealed that marijuana was highest among students who stay alone than those

staying with their families. Hence, loneliness was found to be one of the contributing factors for drug use among university students in this study.

According to Uwadiae and Adayonfo (2016), the use of marijuana among students in tertiary institutions is a common phenomenon in Nigeria. Garner (2016) reported that even though the use of marijuana among college students and young adults has increased gradually over the past decade, the perceived risk associated with regular marijuana use has steadily declined since the early 1980s. This supports the finding by Makike and Mofokeng (2017) that initiation into drugs often begins during teenage years and usually peaks between 18 to 25 years.

Marijuana use during youth is clearly associated with many harmful social and psychological problems, with evidence of a link to lower educational attainment, especially among early and frequent users (Earleywine, 2002). According to van Zyl (2013), both qualitative and quantitative research shows the significance of peer pressure as a key reason for drug use amongst South African youths. Peer pressure, curiosity and lack of awareness are often cited as the main reasons for youth getting involved in drug use.

The majority of students who use drugs at university, first did so prior to entering, but a significant number of students begin drug use after entering tertiary institutions (Masike & Mofokeng, 2017). In support of this, Neser, Van der Merwe, Ovens, Ladikos and Prinsloo (2003) indicated that most people start using marijuana when friends or siblings who use the drug, pressurise them to try it which is often the case at academic institutions. Some students are under the misconception that marijuana will help them improve their grades, or they may think it is 'cool' because they hear about it in the lyrics of songs, see it on television and/or in movies (Neser et al., 2003).

Individuals who are introverted, submissive and feel inferior, who lack confidence in themselves and others, and who have a great need for recognition may take drugs to acquire a sense of well-being. Males are more likely to use marijuana than females. Drug use amongst females is often associated with abuse of other illicit or legal substances like 'over-the-counter' prescription drugs and alcohol, which are more socially accepted (Masombuka, 2013). In support Steyn and Hall (2015) indicate that local and international evidence shows that male students present higher levels of alcohol, tobacco and marijuana use, while females appear more prone to the use of prescription medication.

A low socio-economic status has been found to be a risk for substance abuse. Specifically, marijuana and other substance use was found to be prevalent amongst individuals with a socio-economic disadvantage (Fergusson, Boden, & Horwood, 2015). Students in an African study who used bursaries loans drank on average two days more than individuals than students who did not need student loans.

According to Steyn and Hall (2015), evidence indicates an inverse relationship between marijuana use and socio-economic status, specifically among students and unemployed individuals. Conversely, evidence of increased economic development in South Africa reflects increased substance use, possibly as a result of having more disposable income. Nhapi and Mathende (2016) highlight that drugs serve as an escape mechanism for stress, school and personal coping problems. They note that students who cannot handle everyday schooling issues, sports, family or emotional problems as more likely to abuse drugs.

Marijuana use is typically seen as a deviant social behaviour as demonstrated by popular culture and other media sources. However, social groups and their associated norms may play a large role in how people use marijuana. The norms of religious affiliation, social networks, and one's personal ethical domain impact one's decision to engage in the use of marijuana (Borcherding, 2016). From a higher education perspective, Suerken et al. (2016) posit that college freshmen in America are more likely to engage in illicit drug use, likely due to little direct parental influence and/or the college social environment, where other students may be experimenting with drugs, or they were users upon admittance to college. Educational and economic disparities may be enough of an impetus to engage in drug related behaviour, however popular culture often provides a glimpse into drug related subgroups and erroneously glamourises the associated behaviours and lifestyle that accompany drug abuse (Borcherding, 2016).

Marijuana is linked to school failure (D'Amico et al., 2017). The same study indicated that marijuana use derails reasoning capacity and lowers brain development amongst young adults. Its negative effects on attention, memory, and learning can last for days and sometimes weeks especially if you use it often. Someone who smokes marijuana daily may have a 'dimmed-down' brain most or all of the time. Compared with their peers who do not use, students who smoke

marijuana tend to get lower grades and are more likely to drop out of high school. Research even shows that it can lower intellect if smoked regularly in the teenage years. Also, long time marijuana users report being less satisfied with their lives, having memory and relationship problems, poorer mental and physical health, lower salaries, and less career success (NIDA, 2018). In support, Mohasoa and Fourie (2012) state that abuse of substances among young adults is associated with a broad range of high-risk behaviour. These types of behaviours can lead to profound negative health, economic and social consequences.

According to Roulette, Kazanji, Breurec and Hagen (2016), it is unclear when marijuana was introduced in Africa. However, some authors argue that marijuana arrived in Africa as early as 4000–3000 (BC), but others think that it arrived via Moslem sea traders from the Indian sub-continent around the 1st century AD. Today, the prevalence of marijuana use in Africa is estimated at 5–12.5%, with the highest rate in West and Central Africa, although complete data is very scarce (Roulette, Kazanji, Breurec, & Hagen, 2016).

The use of marijuana by the indigenous people of Africa can be traced back to 14th century in Ethiopia. Since marijuana did not originate in Africa, the ancient tribes who used it had to acquire it through trading with outsiders. Originally, African tribesmen chewed cannabis leaves, but they soon learned the art of smoking the plant, which changed African culture in many ways. One tribe, the Bashilenge, formed their entire religion around the use of cannabis. The Bashilenge call themselves Bena-Riamba, which is translated 'the sons of hemp'. This ancient culture regarded marijuana as a God and the pipe as a symbol of peace. They believed that marijuana had universal magical powers and was used extensively to ward off evil spirits. Deeply ingrained in the fabric of African culture, marijuana was used in ancient times in a medicinal capacity to treat common conditions such as dysentery and malaria. In some tribes, marijuana use permeated almost every aspect of societal life (Roulette et al., 2016).

Marijuana abuse is a social ill that cuts across the social strata of Ghana. Policies have been implemented to eradicate the illicit abuse of drugs by respective governments but it is still a large problem. In various universities in Ghana, authorities have laid strict rules to combat marijuana use but these have had little or no effect (Adu-Gyamfi & Brenya, 2015).

According to Nyathi (2005), in countries like Zimbabwe, marijuana consumption is high among the people from Binga and Tonga people along the Zambezi region. Amongst these groups, people hold positive attitudes towards marijuana as they view it as helpful in treating some diseases and driving away evil spirits. Furthermore, the Binga and the Tonga people of Zimbabwe have been identified with marijuana which they call *mbanje* or *dagga*. A number of stories have emerged regarding Binga's Tonga-speaking people and their relation to marijuana. These range from allegations that women pass most of their time smoking *mbanje* in pot-like pipes called *nchelwa* or *ndombondo*. Due to high value placed on marijuana among the Tonga tribe it has been reported that the Tonga feed the *mbanje* leaves to rabbits and then crush the droppings, which they then smoke (Nyathi, 2005).

According to Klantschnig (2014), much of the available research on illegal drugs, such as marijuana, heroin, or cocaine, has shown a weak understanding of the drugs historical roots in Africa. This has been a result of a lack of openly available sources on these substances and also because much of this work has been conducted by international control agencies or researchers working closely with them and hence research has often served an immediate policy purpose rather than a better historical understanding of drugs. Klantschnig (2014) indicated that the term 'Dagga' is the Afrikaans pronunciation of the Khoisan word "daxe/dagab", which was also the word used by the early indigenous population to describe the local hemp plant that they used for its medicinal and narcotic effects when smoked.

Kowalski (2016) reports that despite certain disagreements as to origin and propagation of the cultivation and use of the plant, marijuana has been widely used and cultivated for centuries within South Africa, much like alcohol and tobacco. It is frequently (incorrectly) contended that the Khoikhoi were the main cultivators of the plant in southern Africa. According to Parry and Meyers (2014), on 19 February 2014, the Inkatha Freedom Party Member of Parliament (MP) Mario Oriani-Ambrosini made an impassioned plea to President Zuma and the South African (SA) government to legalise the medical use of marijuana and informed Parliament that he was introducing a private member's bill, the Medical Innovation Bill, to move this agenda forward. The President responded by indicating that he had asked the Minister of Health to look into the matter (Kowalski, 2016).

Fatma, Mouna, Leila, Radhouane and Taoufik (2013) posit that the use of marijuana is global and not more in Africa as some pundits' state. According Klantschnig (2014), the Supreme Court of Appeal, South Africa's highest court for non-constitutional matters had the opportunity to consider whether the prohibition on the use and possession of marijuana by Rastafarians constituted an unjustified infringement of their right to freedom of religion. Dagga is a dominant symbol of the Rastafarian religion and, in their view, is absolutely essential to their religious observance. The use of marijuana in the country has not been legalised however, its use by individuals is tolerated.

Generally, many people in Africa have a negative attitude towards marijuana because of how it has been labelled in the past (Sehularo, 2016). According to Ayenigbara (2014) these negative attitudes are a result of lack information about some of the potential benefits of marijuana. According to Babalola, Otu, Oluwaranti and Abayomi (2017), most African countries still hold negative attitudes towards marijuana use as compared to most developed countries which have progressed towards legalizing it. There is high stigmatisation of individuals perceived to be indulging the drug as people associate it with criminality and people with no purpose in life (Bottorff et al., 2013). They also report that many countries in Africa disregard marijuana use based on religious grounds.

In South Africa, people have mixed feelings about the drug. According to Fleischman (2017), community groups such as mothers, grandparents and teachers are not happy with discussions about marijuana legalisation. Their negative attitudes towards the herb are based on the argument that youths are generally troublesome, hence, legalising marijuana will destabilise most homes and communities as youth can end up becoming addicted. Fleischman (2017) pointed out that with high levels of drug addiction already among youth in South Africa marijuana legalisation can perpetuate the existing problem. Furthermore, he reports that principals in most schools around South Africa strongly condemn the legalisation of marijuana as it will lead to poor academic achievement. On the other hand, some religious groups (as noted earlier) such as Rastafarians hold positive attitudes towards marijuana and regard it as an important herb with healing benefits. This group and other proponents for marijuana therefore, cite Chapter 2, Section 15(1) of the South African Constitution which states that "everyone has the right to freedom of conscience, religion, thought, belief and opinion" (South African Constitution Bill of Rights, 1996, p. 116).

According to the World Health Organisation (WHO, 2003), because of rapid change in the socio-economic conditions in Africa and Sub-Saharan Africa many of the youth are using and abusing alcohol and other psychoactive substances which have caused major public health concerns. In a Knowledge Attitude and Prevention (KAP) survey undertaken by WHO (2003) it was found that attitudes amongst adolescents and older youth (10 – 21 years) indicated a relatively high lifetime use of marijuana with 82% reported amongst males and 29% reported use amongst females. Attitudes towards marijuana indicated tolerance and lack of knowledge of long term negative effects of the drug. This is supported by a study by Brook, Pahl and Brook (2006) who found that attitudes (positive) of South African adolescents towards the drug and negative psychosocial factors were related to drug use in a significant manner.

Regardless of negative attitudes held towards marijuana use by policy makers, the community and other organisations in South Africa, it is worrying to note that Marijuana use among the youth is high (Brook et al., 2006). Furthermore, Parry and Myers (2014) state that marijuana is easily accessible and cheap in South Africa. Drug abuse among youth is reported to be high in South Africa. This is because youth associate marijuana consumption with being 'cool' and believe that it is less harmful than other drugs. A higher incidence of marijuana use is reported in the Western Cape and Gauteng Provinces than other provinces. According to Tshitangano and Tosin (2016), just like any other province, cases of marijuana use among the youth has also been recorded in Limpopo province. Tshitangano and Tosin (2016) report that the government has endeavoured to change the attitude of students towards marijuana use through life orientation at high schools but this has had little impact. According to Allen and Holder (2014), it is important to understand attitudes held by university students towards marijuana use because attitudes predicts marijuana use. In agreement, Frohe et al. (2018) remarked that attitudes are also linked to the intention to try marijuana and peer pressure.

2.7 Neuropsychological impact of marijuana use

According to Gottlieb (2012), neuroscience has shown that the human brain continues to develop into the mid to late twenties. During the first decade of life, brain growth occurs mainly in the grey matter (neurons and dendrites) and during the second and third decades, it occurs primarily in the white matter (connectivity). Exposure to neurotoxins during the brain's developmental period can permanently alter the brain's structure and function (and marijuana is a neurotoxin).

According to Wadieh, Adams and Brown (2017), the main psychoactive substance in cannabis is delta-9-tetrahydrocannabinol (THC). When marijuana is smoked, THC moves quickly from the lungs to the bloodstream and the brain, causing an immediate 'high.' THC acts on the endocannabinoid system, which is present in the foetal brain and plays a critical role in normal brain development and function; it affects the growth, differentiation and final positioning of neurons as well as connectivity among neurons. Delta-9-tetrahydrocannabinol (THC binds) to two major cannabinoid receptors, CBR1 and CBR2. The CBR1 receptors are concentrated in the hippocampus (memory), amygdala (emotion and anxiety), nucleus accumbens (reward and motivated behaviour), hypothalamus, basal ganglia (movement), and cerebellum (muscle coordination). The CB2 receptors are located mainly in the immune system. Like other addictive substances, such as opioids, THC activates the reward system by stimulating the release of dopamine (Gottlieb, 2012).

Miller (2013) reports that exposure to THC leads to neural changes affecting diverse cognitive processes. These changes have been observed to be long-lasting, suggesting that neural changes due to marijuana use may affect neural architecture. However, to date, these brain changes as a result of marijuana use remains equivocal. Although functional changes have been widely reported across cognitive domains in both adult and adolescent marijuana users, structural changes associated with marijuana use have not been consistent. Although some have reported decreases in regional brain volume such as in the hippocampus, orbitofrontal cortex, amygdala, and striatum, others have reported increases in amygdala and cerebellar volumes in chronic marijuana users. However, others have reported no observable difference in global or regional grey or white matter volumes in chronic marijuana users (Wadieh, Adams, & Brown, 2017).

The neurocognitive effects of marijuana suggest that using marijuana while the brain is still developing causes more severe and sometimes irreversible damage to the brain. Neurocognitive effects associated with both early and adult use of marijuana include deficits in visual attention, verbal fluency, impulse control, short-term memory recall and other aspects of executive functioning. The neuropsychological effect of adolescent marijuana use is associated with depression and anxiety that is not fully restored with cessation of marijuana use. Although the long-term heavy use of marijuana does not produce anywhere near the debilitating impairment of

chronic alcohol use, marijuana use is associated with neurocognitive impairments in memory, decision-making and attention that worsen with increasing years of regular use (Miller, 2013).

As indicated by Nader and Sanchez (2018), the neuropsychological effects of marijuana can be experienced immediately and up to a week after intensive marijuana uptake. The same study stated that continued use of marijuana can alter structure and distort the normal functioning of the brain. However, the study noted that this is still debatable given other possible causes of such disorders.

Another study by Cox (2017) reported that marijuana use among teenagers can slow down brain development, particularly the hippocampus which is responsible for learning and other memory functions. According to Cox (2017), marijuana decreases the neurons connected to the brain which consequently causes the brain to shrink. The same study reports that the youth should stay away from this drug as the neuropsychological effects can persist even after an individual has stopped using the drug. In some cases, especially among the youth, the neuropsychological effects of marijuana include; slow reaction time and low performance on cognitive assessments. Similarly, Gonzalez, Pacheco-Colón, Duperrouzel and Hawes (2017) report that marijuana use results in poor neuropsychological functioning.

Volkow, Baler, Compton and Weiss (2014) explained that before a person reaches 21 years of age, the brain is more vulnerable to substances such as marijuana which contains THC. Marijuana use interferes with cytoskeletal functions which are antecedents to the development of axonal connections between neurons. Continued use of marijuana predisposes an individual to risks of suffering from mental illness. The neuropsychological effects of marijuana can be reduced by delaying the use of it until an individual is above 21 years when mental faculties are fully developed and less vulnerable to THC however, its continued use destroys brain cells.

2.8 Summary

The literature review of this study focused on the various factors pertaining to marijuana use. These factors include conflicting views of marijuana use, the negative effects of marijuana use, positive effects of marijuana use, educational outcomes of smoking marijuana, global literature related to marijuana use in students, attitudes towards marijuana use in Africa and South Africa and neuropsychological impact of marijuana use. The following chapter provides the theoretical framework for the study.

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 Introduction

The theoretical framework for this study is the Health Belief Model (HBM) developed by Becker and Rosenstock in 1970. According Sharma (2015), the HBM is a cognitive model which suggests that behaviour is determined by a number of beliefs about threats to an individual's well-being and the usefulness and results of particular actions or behaviours and/or attitudes. The health setting during the early 1950's for the US Public Health Service was mainly oriented toward prevention of disease and not treatment of disease. The originators of the HBM were concerned with the widespread failure of individuals to engage in preventive health measures (Skinner, Tiro & Champion, 2015).

The model is influenced by the theories of Kurt Lewin, which states that it is the world of the perceiver that determines what an individual will and will not do (Skinner, Tiro & Champion, 2015). The model was developed in response to the failure of a free tuberculosis (TB) health-screening program. Since then, the HBM has been adapted to explore a variety of long- and short-term health behaviors, including smoking, sexual risk behaviors and the transmission of HIV/AIDS. According to Siddiqui, Ghazal, Bibi, Ahmed and Sajjad (2016), the HBM is a behaviour change model. It is implemented to monitor if people can change or adjust from the initial or undesired behaviour to a more positive and desired behaviour. The model influences attitudes for which attitudes are antecedents to a certain behaviour.

The HBM has been applied to the prediction of an impressively broad range of health behaviours among a wide range of populations. Three broad areas can be identified: (1) preventive health behaviours, which include health promoting (e.g. diet, exercise) and health-risk (e.g. smoking) behaviours as well as vaccination and contraceptive practices; (2) sick role behaviours, particularly adherence to recommended medical regimens; and (3) clinic use, which includes physician visits for a variety of reasons (Green & Murphy, 2014).

Some constructions of the HBM feature the concept of self-efficacy (self-confidence), alongside beliefs (or attitudes) about these actions. These beliefs are further supplemented by additional factors referred to as 'cues to action' which trigger actual adoption of behaviour. This HBM is depicted below.

Figure 1: The Health Belief Model (HBM) (Becker & Rosenstock, 1970).
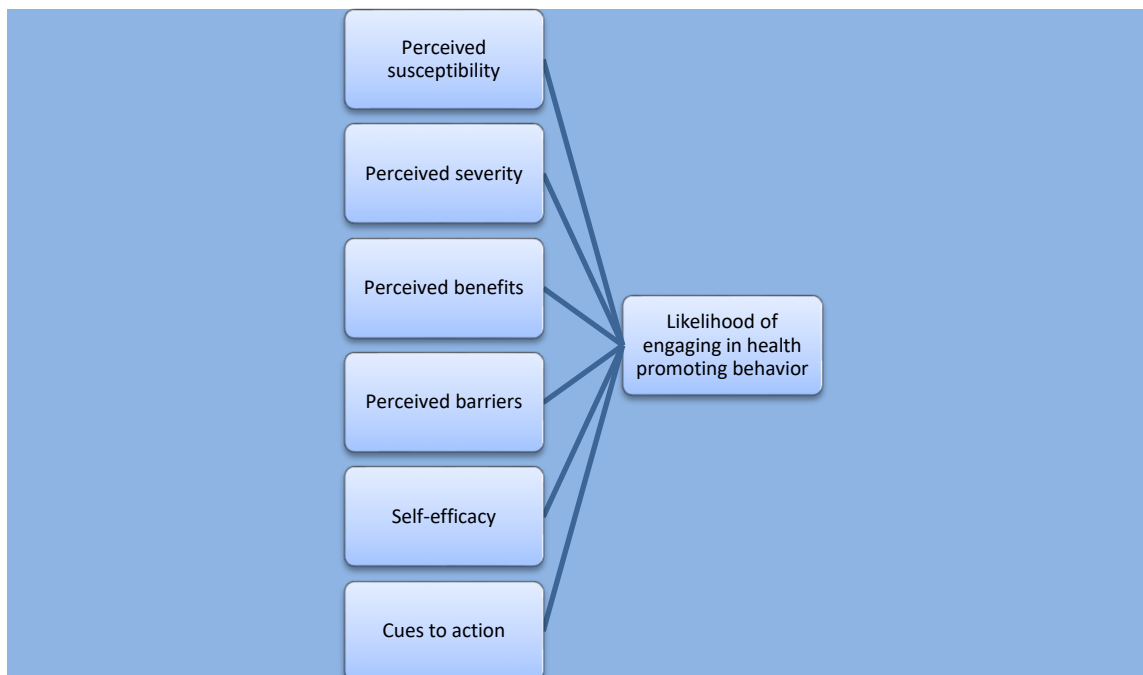
Figure 1 has six factors, which have an influence on an individual's behaviour. The six factors determine an individual's commitment, or non-commitment, towards attaining specific health related goals. According to Sharma (2015), the HBM has six constructs, the first of which is perceived susceptibility. This refers to the subjective belief (or attitude) that an individual hold in respect to acquiring a disease (or state) as a result of taking part in a particular behaviour. The HBM hypothesizes that individuals who perceive that they are susceptible to a particular health problem will engage in behaviours that reduce their risk of developing the health problem. Individuals with little perceived susceptibility may deny that they are at risk of contracting a particular illness. Others may acknowledge the likelihood that they could develop the illness but believe it is unlikely. Individuals who believe they are at low risk of developing an illness are more likely to engage in unhealthy, or risky, behaviours. Individuals who perceive a high risk that they

will be personally affected by a particular health problem are more likely to engage in behaviours that decrease their risk of developing the condition (Skinner et al., 2015).

The second construct of the HBM is perceived severity, which refers to an individual's belief and attitude towards the harm that can result from a specific behaviour. With perceived severity, an individual is more likely to take an action to prevent for instance, smoking if s/he believes that the possible negative physiological, psychological and social effects resulting from smoking pose serious consequences (for instance, cancer, neurocognitive impairment, financial burden, pain and discomfort and/or difficulties with family and social relationships). Specifically, if the undesirable health outcome will not have a large impact on individual's life, s/he will not be motivated to act to avoid it even when s/he is at risk. Although the perception of seriousness of any health condition may be based on medical knowledge, it may also come from the individual's belief about the difficulties a disease would create or the effects it would have on his or her life in general (Skinner et al., 2015).

The third construct of the HBM is perceived benefits, which refers to belief in the advantages of the methods recommended for reducing the risk of the disease or harmful state resulting from a particular behaviour (Rosentsock, 1974). Under perceived benefit, motivation to take action to change a behaviour requires the belief that the preventative behaviour will effectively prevent a condition. The individual must perceive that the target behaviour will provide strong positive benefits. Specifically, the target behaviour must have the tendency of preventing the negative health outcome. For instance, individuals who are convinced that there is a relationship between smoking marijuana and lung cancer are unlikely to adopt a smoking behaviour for the mere purpose of reducing their chances of getting lung cancer (Sharma, 2015).

The fourth construct, goes hand in hand with the construct of perceived benefits, is perceived barriers. Perceived barriers refer to beliefs and attitudes concerning the actual, and imagined costs, of following the new behaviour. With a perceived barrier, an individual may not perform a behaviour despite his/her belief about the effectiveness (benefit) of taking the action in reducing the threat if the barrier outweighs the benefit. The barrier often relates to the characteristics of the health promotion measure. It may be expensive, painful, inconvenient and unpleasant. These characteristics may lead an individual from adopting the behaviour. To take on a new healthy

behaviour, people have to believe that the benefits by far are greater than the consequences of continuing the old behaviour (Skinner et al., 2015).

Another construct is self-efficacy. Self-efficacy is the confidence that an individual has in his or her ability to pursue a positive health behaviour. It is a term that is used to describe an individual's belief about his/her ability to perform the behaviour in question (Bandura, 1977). Generally, people may not want to attempt to do something new unless they think that they can do it. For instance, if someone believes that a new behaviour is useful (high perceived benefit), but does not think that s/he is capable of doing it (low self-efficacy), chances are that s/he will not try the new behaviour. While it seems intuitively clear that self-efficacy is a significant determinant of health-behaviour(s) following the wide adoption by health-promotion researchers, it is necessary to examine its impact in relation to other health determinants (Skinner et al., 2015). Other studies such as one by Choi et al. (2013), argue that self-efficacy is important in explaining drug use or ability to withstand or fail to turn down pressure to indulge in drugs. The study notes that people with low self-efficacy are vulnerable in terms of pressure to take drugs. Additionally, they suggest that the young must develop strong internal marijuana-resistance self-efficacy (MSE) if the issue of drug abuse is to be eradicated. This MSE is important because it allows an individual to believe in themselves and gives them the ability to cope well even if their peers decide to isolate them if they do not copy the 'drugging' behaviour(s). In other words, high self-efficacy is required for behaviour (attitudes) change.

The sixth construct in the HBM is signs to action, which relate to the causal factors that make an individual feel the need to take positive action. These signs may be internal for example, perception of a negative bodily state or external (as in advice from a third party). Rosenstock (1974) suggests that a combination of threat and behavioural evaluation variables could reach a considerable level of intensity without resulting in overt action unless an event occurs to trigger action in an individual. Thus, a *cue to action* determinant was added to the model which acts as a trigger for positive health behaviour(s) when appropriate beliefs are held (Rosenstock, 2005). Cues are an important construct and addition to the model because without action, a certain belief or attitude cannot occur. In Rosenstock's original formulation, *cues to action* could include *external cues* such as a mass media campaign, social influence, or *internal cues* such as a negative change in bodily state or perception of symptoms. More generally, cues to action can be events, people, or

things that facilitate behaviour change. Although, cues to action have been identified as an important behavioural determinant, it is the most underdeveloped and rarely measured or researched variable of the model (Rosentsock, 1974).

Sharma (2015) states that the HBM is a good predictor for negative health behaviour beliefs and attitudes. It has been used widely in many countries (Carpenter, 2010; Jones et al., 2015). However, the HBM has been criticised for its failure to accommodate the possibility of other factors contributing towards behaviour change. For example, some studies argue that the model fails to include factors such as emotions (fear), as an individual's fears about getting ill can influence them to be health oriented. Additionally, the model has been criticised for only focusing on health oriented behaviour(s) at the expense of other positive outcomes such as exercising to look and feel good, not necessarily for health reasons. However, the HBMs predictive ability is highly regarded and researched thus it was considered an appropriate model to underpin the current research looking at the attitudes of undergraduate students towards marijuana use at the University of Limpopo.

3.2 Summary

The chapter presented the theoretical framework for the study which is Becker and Rosenstock's (1970) Health Belief Model (HBM). The next chapter outlines the research methodology used by the researcher to complete the study.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

In this chapter the research procedures for the investigation are presented. This includes the research design, the sampling technique, data collection, data analysis and ethical considerations.

4.2 Research design

The study used a quantitative approach utilising a cross-sectional survey design. Cross-sectional surveys are aimed at determining the frequency of a particular attribute and collecting all data at a one given point in time. This enables the researcher to assess the prevalence of a variable of interest. Cross-sectional surveys are useful when assessing attitudes, perceptions and knowledge about something specific. The study intended to determine the attitudes of third year psychology students at the University of Limpopo towards marijuana use. Furthermore, this research design was relevant to the current study in that it was aimed at collecting data about marijuana in a defined population (males and females) at a specific time as it was not a longitudinal study.

4.3 Sampling

4.3.1 Population and sample

The population under investigation were the third year students registered at the University of Limpopo.

4.3.2 Area of study

The study was conducted at the University of Limpopo in Sovenga, situated 25 kilometres outside Polokwane, Limpopo Province.

4.3.3 Sampling method

The study made use of simple random sampling. According to Du Plooy-Cilliers, Davis and Bezuidenhout (2014), simple random sampling is the most basic type of random sampling. It is used when each unit of the population has the same and/or equal chance of being selected as part of the entire sample. The sample chosen for the study consisted of third year students registered at the University of Limpopo.

As the number of third year students was large and not manageable for a small study it was deemed appropriate to use a sub-group of this population. In this study third year undergraduate psychology students were chosen as it was an accessible population. The study chose third year students as they have more experience in a university environment and was more likely to have formed attitudes towards the use of marijuana, although they themselves may not be users and may not have witnessed its use on campus.

To determine the sample size, the researcher employed the Krejcie and Morgan's (1970) sample size table (See appendix 2). A random sample of 165 third year psychology students was drawn from the total third year psychology population of 295 students registered at the University of Limpopo. On the Krejcie and Morgan (1970) table for determining sample size, the sample size of N=295 is S=165. A computerised programme was utilised to randomly select a sample size of 165 out of the population of N=295. The sample of 165 hundred third year psychology students was placed on a list, using student numbers only so confidentiality was not breached.

4.4 Data collection

The data collection method that was chosen for the study was a self-report survey protocol. The participants were asked to fill in a survey questionnaire self- scale. The researcher gave each student the same questionnaire and all needed instructions were provided on the questionnaires. The students were asked for permission to participate in the study. Furthermore, how the sample was chosen was explained to the third year psychology students. The researcher visited the third year psychology class with approval from the third year co-ordinator and lecturer of the module at that time. The researcher informed the students that they all had a chance of being selected; the researcher further explained how those that were selected were selected by explaining what random sampling is. The list was given to the class representative to circulate the list, and placed on the psychology noticeboard, so that those that who were randomly selected could be informed. The researcher further explained, in the letter that was attached, that the survey was voluntary and that identified students did not have to participate if they did not want to.

4.4.1 Data collection tools

The research tool that was implemented in the study was a self-report questionnaire made up of a demographic section (Section A) and three standardised and validated questionnaires (Sections B,

C and D). The questionnaire that was used to make up the self-report survey was as follows (See Appendix 1):

A. **The Simple Screening Instrument for Marijuana Use**. The survey is used to assess marijuana use and knowledge. The questionnaire was developed by Winters and Zenilman (1994). The survey has not been used in a South African higher education institution (HEI) context thus internal reliability will be assessed and reported (See 4.6.1) statistically by the statistician assisting the researcher.

B. **Questions related to knowledge about marijuana**. The questionnaire was used to assess knowledge about marijuana.

C. **The General Self-Efficacy Scale** is a self-report measure of self-efficacy (self-confidence). It consists of ten items. Internal reliability for general self-efficacy on the scale good to high: Cronbach's Alphas = .76 and .90. It was developed by Jerusalem and Schwarzer (1981). The scale is free and available to use for researchers. The scale was created to assess a general sense of perceived self-efficacy with the aim in mind to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events. The measure has been used internationally with success for two decades. It is suitable for a broad range of applications. It can be used to predict adaptation after life changes, but it is also suitable as an indicator of quality of life at any point in time. Cronbach Alpha for the scale, as used in this study, is reported under 4.6.1.

D. **The Health Belief Model (HBM) Survey** is one that is applied to understand attitudes and behaviours towards health concerns. The HBM survey was developed by Rosenstock, Strecker and Becker (1988). The survey measures attitudes related to: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy and cues to action. The survey has not been used in a South African Higher Education Institution (HEI) context thus internal reliability will be assessed and reported statistically (see 4.6.1) by the statistician assisting the researcher.

4.5 Data analysis

The data that was gathered was converted to numerical values and was analysed statistically. Descriptive statistics was used to give a holistic overview of the data. Frequency distributions and figures were utilised to make interpretation easy. The study utilised an independent t-test which is

a statistical method used to test differences between group means to look for any significant differences between male and female responses. The Pearson correlation coefficient (Pearson r statistic) was used to determine if there is an association between scales in terms of general self-confidence (self-efficacy), marijuana use and knowledge and self-efficacy on the HBM scale.

4.6 Validity, reliability and bias

Existing literature indicates that factors such as reliability, validity and bias have a bearing on the quality of the research (Mohamad, Sulaimanb, Sern, & Salleh, 2015). Accordingly, Bolarinwa (2016), urges researchers to ensure that these factors are given enough attention when compiling their research methodology which was undertaken in this study.

4.6.1 Reliability

According to Du Plooy-Cilliers et al. (2014), reliability is a measure of whether a particular technique, applied repeatedly to the same object, yields a similar result each time. In other words, reliability is a measure of consistency or stability of an instrument. This study used a Cronbach's alpha as a measure of reliability. The whole questionnaire scored a Cronbach's alpha of 0.82 showing high reliability. The Cronbach's alpha for general self-efficacy was 0.86 and consisted of 10 questions. The Cronbach's alpha for attitudes was 0.6 and consisted of six scales. According to Ghazali (2008), a Cronbach's Alpha value of 0.6, while generally considered very low, is acceptable in social sciences. Furthermore, the study was controlled by the use of the random sampling method to ensure objectivity. Each unit stood a chance of being selected to participate in the study making results generisable.

4.6.2 Validity

Validity refers to the extent to which an empirical measure sufficiently reflects the real meaning of the concept under consideration (Du Plooy-Cilliers et al., 2014). Even though it does not necessarily mean that a reliable instrument is valid, some researchers point out that reliability can be a prerequisite towards attaining validity. As the questionnaires were standardised they questions were valid and asked questions appropriate for the subject and reliability, as noted above, was appropriate for the social sciences. Additionally, to ensure validity, the questionnaire was

reviewed by academic experts at departmental and school levels as well as the University Ethics and Research Committee. Furthermore, the questions on the questionnaire were linked to the key variables in the topic to ensure validity.

4.6.3 Bias

According to Du Plooy-Cilliers et al. (2014) bias in research may influence the research results in the sense of how and where data is collected, and how data is interpreted. For the purpose of this study bias was controlled by using random sampling. Random sampling eliminated self- selection bias because the researcher did not control who receives the surveys and this ensured that the sample was a representative of the larger population. In addition, the participants were left to complete the questionnaire alone without the interference by the researcher. This helped to reduce bias because the participants gave their sincere responses without getting a clue from the researcher.

4.7 Ethical considerations

4.7.1 Informed consent

According to Du Plooy et al. (2014) informed consent is the approval of respondents for taking part in the study provided they have full knowledge of what the research entails. The researcher informed the participants about the significance of the research, the purpose, the aims and objectives. The researcher also explained other important information to the participants before they took part in the study. The participants were also informed about the information that will be required.

4.7.2 Confidentiality

Information provided by respondents was treated as highly confidential. The researcher ensured this by coding the participant's identity, instead of writing their names. The researcher explained this to the participants and it was also included in the written informed consent form. The questionnaires were kept separately from the consent forms after completion of questionnaire and no identifying details were included on the questionnaires.

4.7.3 Protection from harm

According to De Vos, Strydom, Fouche and Delport (2011), the essential ethical rule of research is that it must bring no harm to the respondents. The respondents were assured that they were not going be hurt in any way by the researcher or anything related to the research (throughout the duration of the research process). For instance, the researcher ensured this by making sure that the results were presented and used in a way that would not affect the respondents by treating them with respect during the process.

4.7.4 Voluntary participation

According to De Vos et al. (2011) participation should at all times be voluntary and no one should be forced to take part. Participation in this study was voluntary. Respondents were not forced into participating in the study in any way. The respondents were not deceived in any way about the reason for the research. All respondents gave their consent to participate in the study.

4.8 Summary

This chapter described the research approach that was implemented. The study adopted a quantitative research design which was cross sectional in nature. A questionnaire was used to collect data from participants. The chapter also gave an overview of the steps undertaken to gather and collect data. Descriptive statistics and correlation analysis were used to analyse the data. The chapter further discussed the issues related to reliability and validity of the data collection instrument as well as the ethical procedures. The next chapter will present the research results and analysis.

CHAPTER 5: STUDY RESULTS AND ANALYSIS

5.1 Introduction

This chapter presents the results of the study. The major purpose of the study was to determine the attitudes of third year psychology students at the University of Limpopo towards marijuana use. A sample of 165 students was drawn from a population of 295 students. The chapter will start by outlining the demographic characteristics of the respondents thereafter results from the surveys will be presented utilising descriptive statistics using a mixture of frequency tables and figures. Furthermore, the chapter will present an independent t-test used to ascertain any gender differences on marijuana use amongst respondents. The chapter will conclude by presenting the results of a Pearson r correlation co-efficient analysis intended to test the relationship between the self-efficacy of the students and their attitudes towards marijuana use.

5.2 Section A: Demographics

This section focuses on the study demographics. Demographic factors considered in this study are gender, age, ethnicity and religion. The results are outlined below.

Figure 2: Gender of respondents
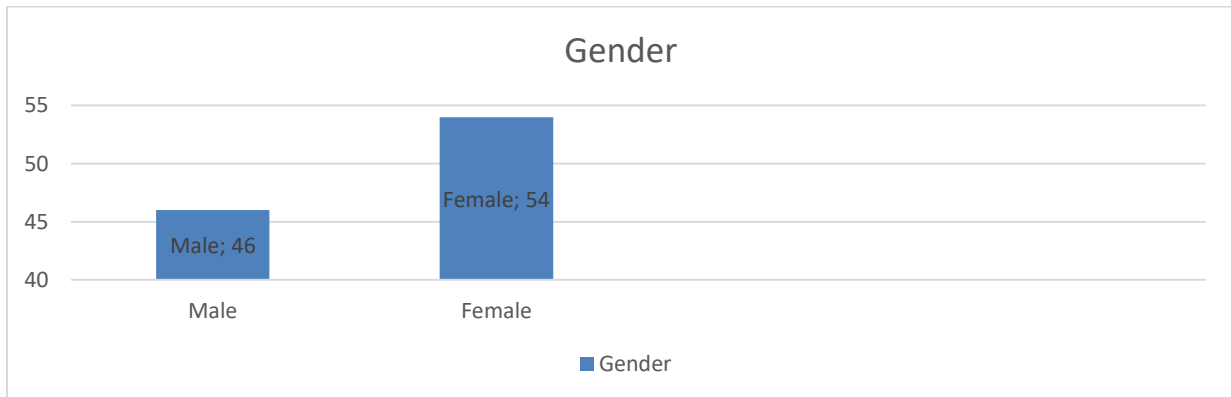
Figure 2 indicates the gender of the respondents. As indicated by the figure, 46.1% of the respondents were males while 54% were females. The results show that the survey consisted of more females than males which is commensurate with the intake of students at the University of Limpopo as more females than males are registered as students.

Figure 3: Age of the respondents
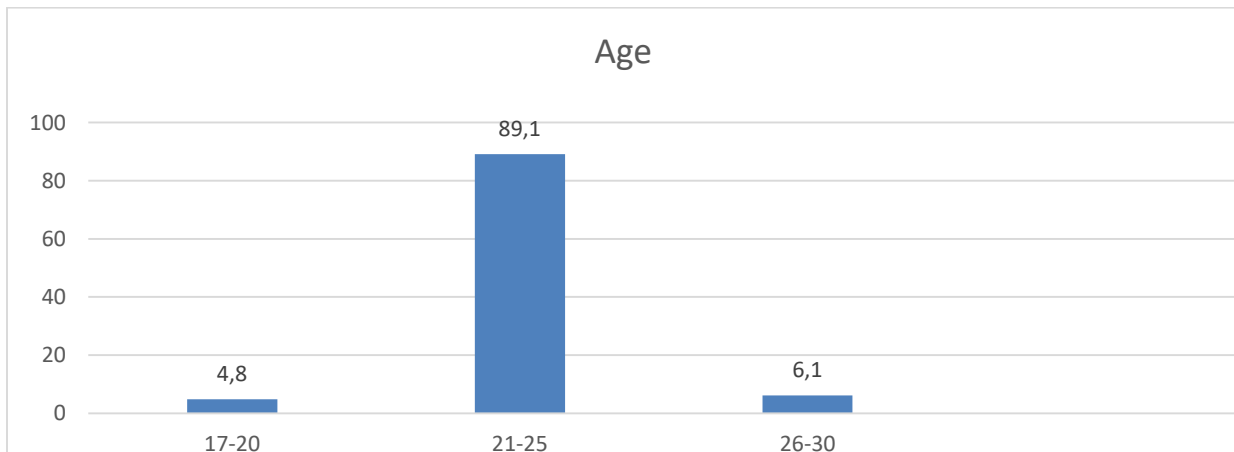
Figure 3 presents the age distribution of the respondents. The results show that 4.8% of the surveyed 3rd year students are 17-20 years old while majority (89.1%) fall within the 21-25-year age group and 6.1% fall in the 26-30-year age group. It can be inferred from the findings that most of the 3rd year students are 21 years old and above. This suggests that the respondents are mature enough to provide credible information.

Table 1: Ethnicity

Ethnicity	Frequency	Percentage%
Black	165	100
White	0	0
Coloured	0	0
Indian	0	0

Table 5.1 shows the ethnicity representation of the respondents. As indicated by the table, all the respondents were black which reflects the student demographic at the University of Limpopo.

Figure 4: Religion of the respondents
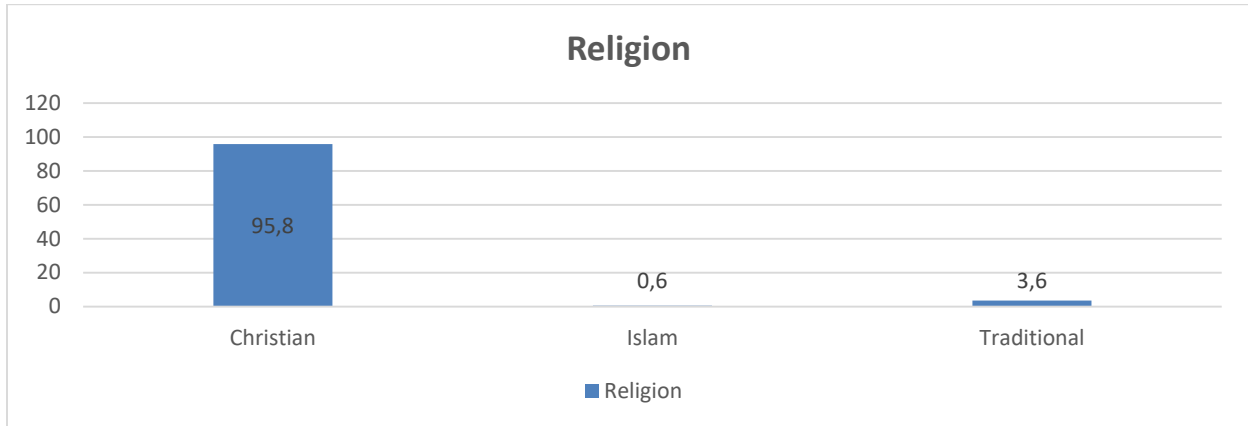
Religion

Figure 4 presents the findings on the religious affiliation of the respondents. The findings show that 96% of the respondents were Christians and only 4% followed traditional African spiritual beliefs and 0.6% followed Islam. Overall, the results show that majority of the participants were Christians.

Figure 5: Have you repeated any undergraduate year level?
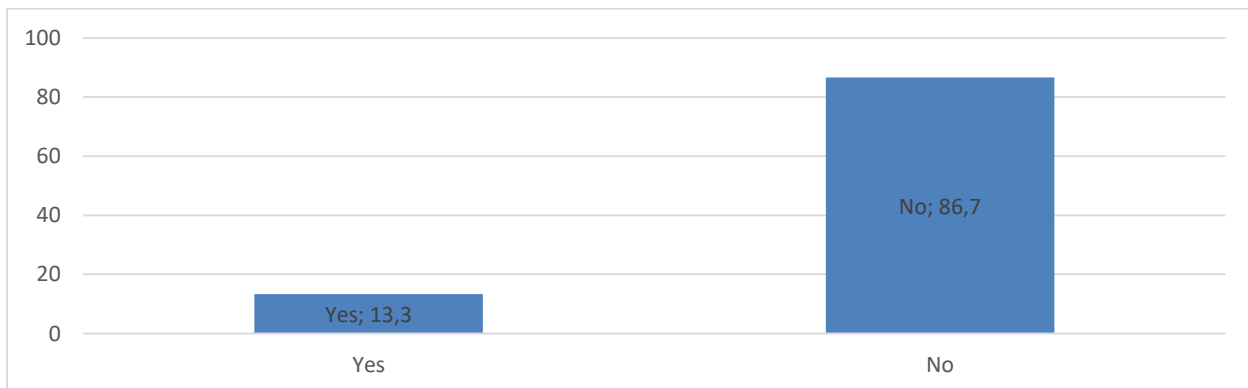
Figure 5 shows the results in terms of students ever having repeated a year level or not. The results indicated that only 13% had once repeated a level while the majority (87%) had never repeated a level.

Figure 6: If yes which one? (repeated a year level)
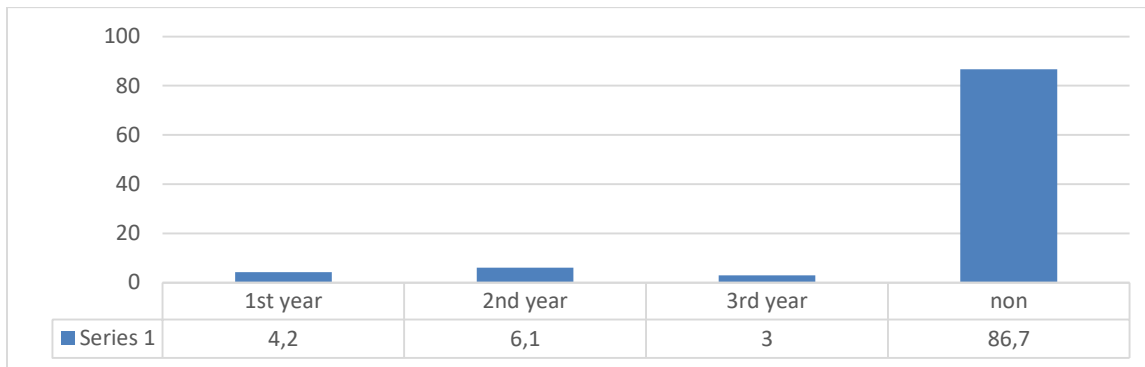
Figure 6 reports responses on the question which prompted students to indicate the level they have repeated if they ever did. The results indicate that of the 22 students who reported that they have repeated a level, 7 (4.2%) repeated level 1, 10 (6.1%) repeated level 2 and (3.0%) repeated level 3. The majority of the students (86.7%) indicated that they never repeated a year level.

5.3 Section B: Simple screening instrument for marijuana screening (use) and marijuana knowledge survey

This section provides responses to the simple screening instrument for marijuana use (22 questions) and marijuana knowledge. Table 2 provides an analysis of the responses for marijuana screening followed be textual interpretation. Section 5.3.1 provides analysis to marijuana knowledge questions presented in frequency tables followed by a brief explanation.

Table 2: Marijuana use screening (questions)

Statement	YES%	NO%	NA%
1. Have you used marijuana?	45.5	54.5	0
2 Have you felt that you use too much marijuana?	9.7	35.8	54.5

3. Have you tried to cut down or quit smoking marijuana?	18.8	26.7	54.5
4. Have you gone to anyone for help because of your marijuana smoking? (Such as Narcotics Anonymous, Cocaine Anonymous, counsellors, or a treatment programme.)	3.6	41.8	54.5
Have you had any of the health problems below? For example, have you:			
5. Had blackouts or other periods of memory loss?	15.2	30.3	54.5
6. Injured your head after smoking?	1.8	43.6	54.5
7. Had convulsions, delirium tremens ("DTs" or shaking)?	9.1	36.4	54.5
8. Had hepatitis or other liver problems?	3.6	41.8	54.5
9. Felt sick, shaky, or depressed when you stopped?	5.5	40	54.5
10. Felt "coke bugs" or a crawling feeling under the skin after you stopped using marijuana?	3	42.4	54.5
11. Been injured after smoking marijuana?	2.5	43	54.5
12. Used needles to shoot drugs?	0	45.5	54.5
13. Has your marijuana use caused problems between you and your family or friends?	9.7	35.8	54.5
14. Has your marijuana use caused problems at school?	13.9	31.5	54.5
15. Have you been arrested or had other legal problems?	3.6	41.2	54.2
22. Have you lost your temper or gotten into arguments or fights while smoking marijuana?	9.7	35.8	54.5
16. Do you need to use marijuana more and more to get the effect you want?	9.1	36.4	54.5
17. Do you spend a lot of time thinking about or trying to get marijuana?	6.7	38.8	54.5
18. When smoking marijuana, are you more likely to do something you wouldn't normally do, such as break rules, break the law, sell things that are important to you, or have unprotected sex with someone?	21.2	24.2	54.5

19. Do you feel bad or guilty about your marijuana use?	15.2	30.3	54.5
The next questions are about your lifetime experiences.			
20. Have you ever had a marijuana problem?	7.8	37.0	55.2
21. Have any of your family members ever had a marijuana use problem?	15.2	30.9	53.9
22. Do you feel that you have a marijuana use problem now?	2.4	44.2	53.3

Table 2 indicates results for the marijuana screening and knowledge survey. The results indicate that of the 165 respondents 75 (45.5%) indicate that they have used marijuana, whereas 90 (54.5%) indicated that they have not used marijuana. The results thus infer relatively high marijuana use amongst the sample. In terms of the second question, only 9.7% students agreed that they feel that they use too much marijuana while 35.8% opposed the notion and the 54.5 said it did not apply to them. The question that asks if respondents have considered quitting smoking marijuana had the following responses: 18.8% of the students agreed that they had tried to quit smoking marijuana while 26.7% did not agree and 54.5% said it did not apply to them. In terms of seeking help (in terms of their marijuana smoking) only 3.6% of the students agreed that they had gone to seek help while 41.8 did not and the rest said it did not apply to them.

As indicated by table 2, the results show that 15.2% of the students who smoke marijuana agreed that they once experienced blackouts and memory loss while 30.3% disagreed and 54.5% indicated that it was not applicable to them. In terms of the second question, 1.8% of the respondents indicated that they had injured their heads after smoking marijuana, whereas 72 respondents (43.6%) indicated that they had not injured themselves. Fifty-four percent of respondents indicated that the question was not applicable to them. The results showed that the participants who indicated that they use marijuana have not yet experienced serious physical injuries to their bodies after smoking it. Table 2 further indicates that 15 respondents (9.1 %) indicated that they had convulsions or Delirium Tremens (DTs), whereas 60 respondents (36.4%) indicated that they never had such and 54.5% said the question did not concern them. Table 2 also indicated that 6 respondents (3.6%) had hepatitis or other liver problems while 69 respondents (41.8 %) indicated that they had no hepatitis or other liver problem and 54.5% said the question does not concern them. The results further show that 9 respondents (5.5 %) indicated that they felt sick, shaky, or

depressed when they stopped smoking marijuana while 66 respondents (40.0%) indicated they did not feel sick, shaky, or depressed and 54.5% said the question did not concern them. In terms of the question, felt 'coke bugs' or a crawling feeling under the skin after they had stopped using marijuana. Three percent (3%) of the respondents indicated that they had felt "coke bugs" or a crawling feeling under the skin after they stopped using marijuana, while 42.4% indicated that they had not felt such. Four respondents (2.4 %) indicated that they had been injured after smoking marijuana while 71 respondents (43.0 % indicated that they had not. 90 (54.5%) students who indicated N/A are those who said they never used marijuana.

In terms of problems associated with smoking marijuana, results from table 2 indicated that 75 respondents (45.5%) indicated that they had not used needless to shoot marijuana and the remaining and nobody agreed and the remaining 90(54.5%) of the respondents are those who never used marijuana before. The results also show that 16 (9.7%) of the respondents indicated that their marijuana use had caused problems between them and their family or friends while 59 (35.8%) indicated that it did not. In response to the question, has your marijuana use caused problems at school, 13.9% of the students agreed while 31.5% disagreed and the remaining 54 % fall in the category of people who never took marijuana. The results from table 2 also shows that only 3.6% of the students have been arrested or had other legal problems while 41.2% of the respondents indicated that they never got arrested or have any legal problems and 54.2% of the respondents said the question did not concern them. As indicated by table 2, 9.7% of the respondents indicated that they have once lost temper or gotten into arguments or fights while smoking marijuana while 35.8% never experienced such and the remaining 54.5% are non-marijuana smokers. Fifteen (9.1%) of the respondents indicated that they needed to use marijuana more and more to get the effect they want while 60 (36.4%) indicated that they did not use more and more marijuana to get the affect they want. Table 2 indicates that 11 (6.7%) of the respondents said they spend a lot of time thinking about or trying to get marijuana while 64 (38.8%) indicated that they do not spend a lot of time thinking about or trying to get marijuana. The results from table 2 further show that 35 (21.3%) of the respondents indicated that when smoking marijuana they are less likely to do something they wouldn't normally do, such as break rules, break the law, sell things that are important to them, or have unprotected sex with someone while 40 (24.2%) indicated that they would do something they would not normally do and the remaining 54.5% said the question does

not concern them. Only 25(15.2%) of the respondents indicated that they feel bad or guilty for using marijuana while 50 (30.3 %) indicated that they do not feel guilty for using marijuana. Table 2 also shows that 13(7.8%) of the respondents indicated that they had a marijuana problem while 61(37.0%) indicated that they have not had a marijuana problem and the remainder (54.2%) never used marijuana. Twenty-five (15.2%) of the respondents indicated that they have a family member who has a marijuana use problem while 51(30.9%) indicated that they have no family member with a marijuana use problem. However, only 4(2.4%) of the respondents indicated that they feel they have a marijuana use problem now and 73 (44.2%) indicated that they feel they do not have a problem and the remainder said the question does not concern them.

5.3.1 Questions related to knowledge about marijuana

Other questions related to knowledge and marijuana use are reported in frequency tables as follows (with a brief explanation following the table).

Frequency table 1: <u>Is Tetrahydrocannabinol is a substance found in marijuana?</u>

		Tetrahydrocannabinol is a substance found in Marijuana?			
		Frequency	Percentage %	Valid Percentage %	Cumulative Percentage %
Valid	Yes	121	73.3	73.3	73.3
	No	43	26.1	26.1	99.4
	NA	1	0.6	0.6	100.0
	Total	165	100.0	100.0	

The results from frequency table 1 indicated that majority of the students 73.3% agree that Tetrahydrocannabinol is a substance found in marijuana while 26.1% of the students disagreed. This indicates that over a quarter of the sample have poor knowledge about the drug.

Frequency table 2: <u>Marijuana effects brain functioning negatively particularly the hippocampus?</u>

Marijuana affects brain function negatively particularly the hippocampus?					
		Frequency	Percentage %	Valid Percentage %	Cumulative Percentage %
Valid	Yes	131	79.4	79.4	79.4
	No	34	20.6	20.6	100.0
	Total	165	100.0	100.0	

As indicated by frequency table 2, 131 (79.4%) agreed that marijuana effects brain functioning negatively particularly the hippocampus and 34 (20.6%) indicated that marijuana does not affect brain functioning negatively. This is problematic as 20% of students do not think that the drug has a negative cognitive impact which it does (Fergusson et al., 2015).

Figure 7: <u>Marijuana is addictive?</u>
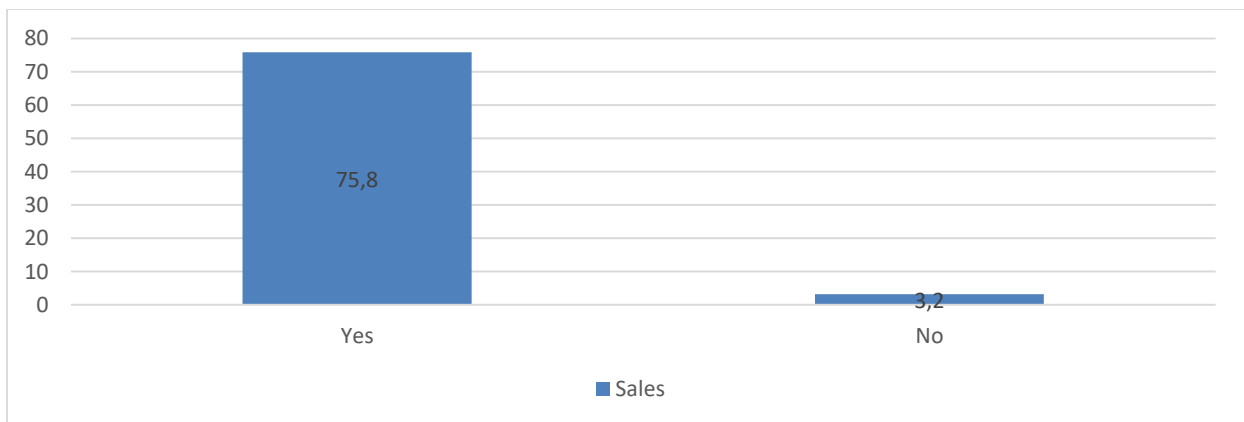
The results from figure 7 125(75.8%) indicates 96% of the students agreed that marijuana is addictive and 40 (24.2%) stated No, marijuana is not addictive. Nearly a quarter do not think the drug is addictive however, recent research has shown that it is (Mujuru & Sekhejane, 2014).

Figure 8: <u>A person who has smoked marijuana may have difficulty keeping his or her balance?</u>
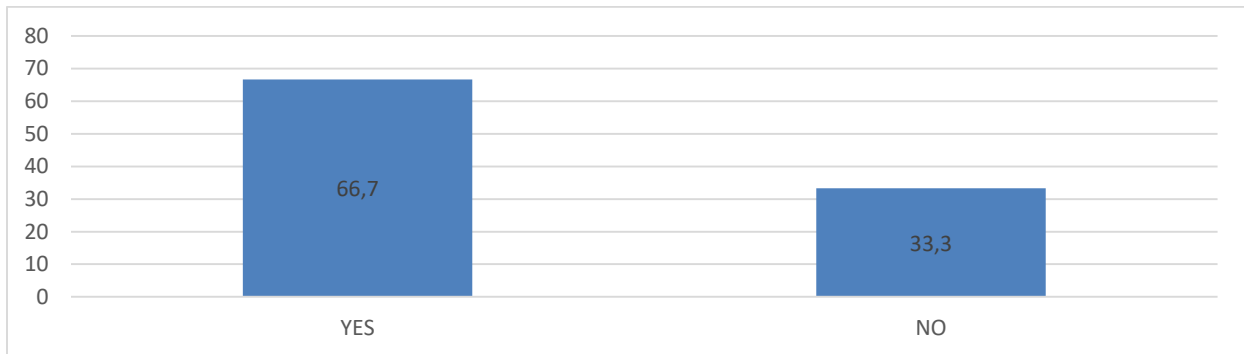
As indicated by figure 8 110 (66.7%) respondents indicated that yes a person who has smoked marijuana might have difficulty keeping his or her balance while 55 (33.3%) indicated that No, a person who has smoked marijuana does not have difficulty keeping his or her balance. A third of the sample do not know that marijuana can impact on physical balance (Phillips et al., 2015).

Frequency table 3: <u>A student who smokes marijuana may do poorly on a test given the next day because of Marijuana's effect on the brain.</u>

		A student who smokes marijuana may do poorly on a test given the next day because of marijuana's effect on the brain?			
		Frequency	Percentage %	Valid Percentage %	Cumulative Percentage %
Valid	Yes	108	65.5	65.5	65.5
	No	57	34.5	34.5	100.0
	Total	165	100.0	100.0	

Frequency table 3 indicates that 108 (65.5%) respondents agreed that a student who smokes marijuana may do poorly on a test given the next day because of marijuana's effect on the brain while 57 (34.5%) indicated that a student who smokes marijuana may not do poorly on a test given

the next day because of marijuana's effect on the brain. Another problematic response from over a third of the sample as the drug can impact negatively on academic performance (Adu-Gyamfi & Brenya, 2015).

Figure 9: <u>Marijuana is a plant</u>
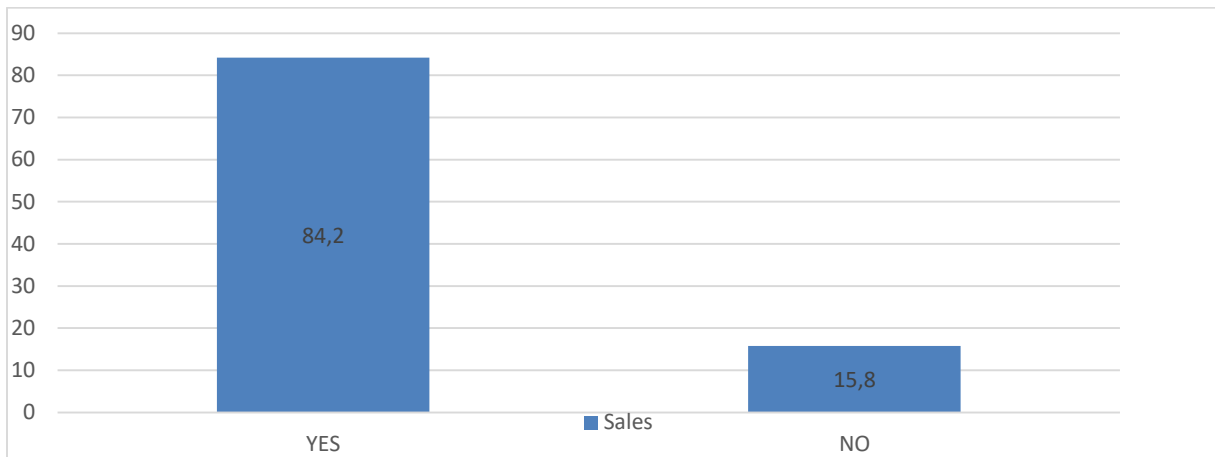
The results of figure 9 indicate that 139(84.2%) respondents say Yes, marijuana is a plant while 26 (15.8%) indicated that No, marijuana is not a plant. Knowledge about what marijuana actually is, a plant, is poor from over 15% of the sample.

Figure 10: <u>Marijuana leaves are stronger than the seeds?</u>
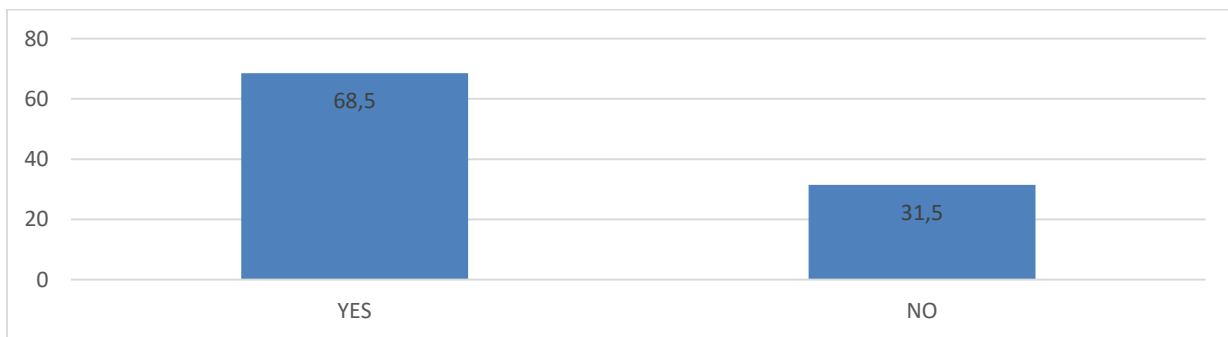
The results indicated in figure 10 show that 113 (68.5%) respondents indicated Yes, marijuana leaves are stronger than the seeds, while 52 (31.5%) indicated that No, marijuana leaves are not stronger than the seeds (which is correct).

Frequency table 4: <u>Marijuana can be mixed with other drugs (prescription and non-prescription)</u>?

		Frequency	Percent	Valid Percent	Cumulative Percent
Marijuana can be mixed with other drugs (prescription and non-prescription)?					
Valid	Yes	124	75.2	75.2	75.2
	No	41	24.8	24.8	100.0
	Total	165	100.0	100.0	

According to table 4, 124 (75.2%) indicated yes marijuana can be mixed with other drugs (prescription and non-prescription, while 41 (24.8%) indicated that marijuana cannot be mixed with other drugs (prescription and non-prescription). Nearly a quarter of the sample showed poor knowledge in response to this question as the drug is frequently mixed with other drugs.

Figure 11: <u>Marijuana is a mood enhancer?</u>
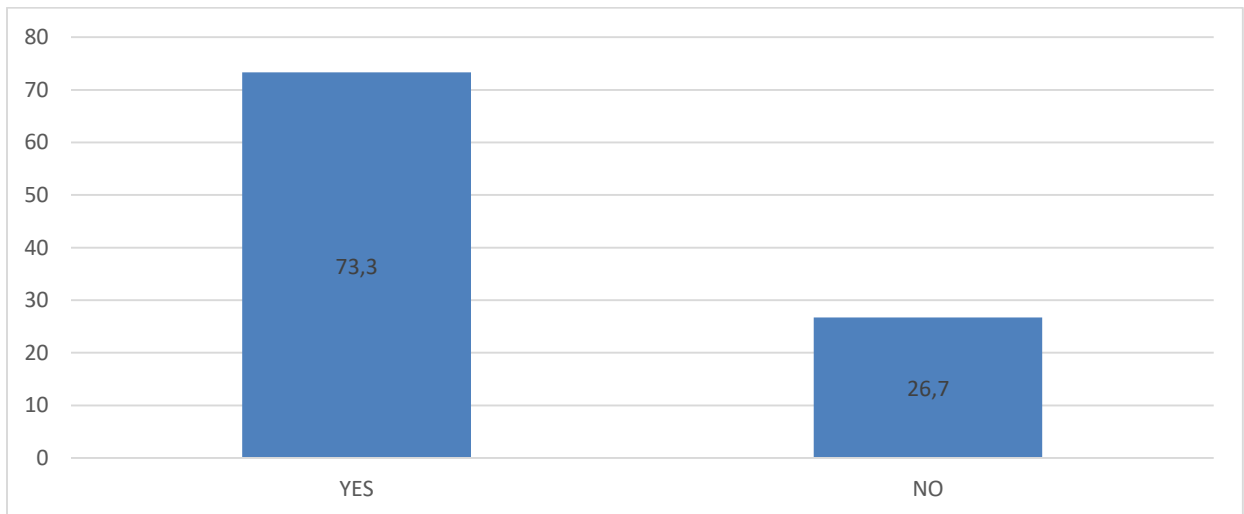
The results from figure 11 indicate that 121 (73.3%) respondents indicated that marijuana is a mood enhancer, 44 (26.7%) indicated marijuana is not a mood an enhancer, which is incorrect and goes to poor knowledge about the drug.

Frequency table 5: <u>Marijuana and alcohol do not have an effect on each other?</u>

		Frequency	Percent	Valid Percent	Cumulative Percent
Marijuana and alcohol do not have an effect on each other?					
Valid	Yes	30	18.2	18.2	18.2
	No	135	81.8	81.8	100.0
	Total	165	100.0	100.0	

As indicated by the results on table 5, only 30 (18.2%) respondents indicated that marijuana and alcohol do not have an effect on each other, while 135 (81.8%0 indicated that marijuana and alcohol doe have an effect on each other. The majority were correct however, 30 respondents showed poor knowledge pertaining to this question.

5.4 Section C: The General Self-Efficacy Scale

The General Self-Efficacy Scale is a self-report measure of self-efficacy. It consists of ten items. Internal reliability for general self-efficacy is high: Cronbach's Alphas = .76 and .90. It was developed by Jerusalem and Schwarzer (1981). It measures self-efficacy using Likert scale questions.

Frequency table 6: <u>I can always manage to solve difficult problems if I try hard enough</u>

		Frequency	Percent	Valid Percent	Cumulative Percent
I can always manage to solve difficult problems if I try hard enough					
Valid	Not at all true	7	4.2	4.2	4.2
	Hardly true	18	10.9	10.9	15.2
	Not sure	26	15.8	15.8	30.9
	Moderately true	78	47.3	47.3	78.2
	Exactly true	36	21.8	21.8	100.0
	Total	165	100.0	100.0	

Frequency table 6 indicated that 7(4.2%) respondents indicate that this is not at all true, they cannot always manage to solve difficult problem if they try hard enough. Eighteen 18 (10.9%) indicated that the statement was hardly true. Twenty-six (5.8%) indicated that they were not sure, while 78 (47.3%) indicated that the statement was moderately true and 36 (21.8%) indicated that the statement is true.

Frequency table 7: <u>If someone opposes me, I can find the means and ways to get what I want</u>

		Frequency	Percent	Valid Percent	Cumulative Percent
If someone opposes me, I can find the means and ways to get what I want					
Valid	Not at all true	12	7.3	7.3	7.3
	Hardly true	17	10.3	10.3	17.6
	Not sure	48	29.1	29.1	46.7
	Moderately true	60	36.4	36.4	83.0
	Exactly true	28	17.0	17.0	100.0
	Total	165	100.0	100.0	

Frequency table 7 indicated that 12 (7.3%) respondents indicated that it is not at all true if someone opposes them, they can find the means and ways to get what they want. Seventeen (10.3%) indicates that it is hardly true, 48 (29.1%) indicated that they were not sure. While 60 (36.4%) indicated that it was moderately true, 28 (17.0%) indicated that the statement is exactly true, if someone opposes them, they can find the means and ways to get what they want.

Frequency table 8: It is easy for me to stick to aims and accomplish my goals

		Frequency	Percent	Valid Percent	Cumulative Percent
	It is easy for me to stick to my aims and accomplish my goals.				
Valid	Not at all true	4	2.4	2.4	2.4
	Hardly true	23	13.9	13.9	16.4
	Not sure	26	15.8	15.8	32.1
	Moderately true	74	44.8	44.8	77.0
	Exactly true	38	23.0	23.0	100.0
	Total	165	100.0	100.0	

Frequency 8 indicated that 4 (2.4%) indicated the statement was not at all true, it is not easy for them to stick to their aims and accomplish their goals while 23 (13.9%) indicated that it is hardly true and 26(15.8%) indicated that they were not sure. Seventy-four (44.85%) reported that the statement was moderately true and 38 (23.0%) indicated that it was exactly true.

Figure 12: I am confident that I could deal efficiently with unexpected events
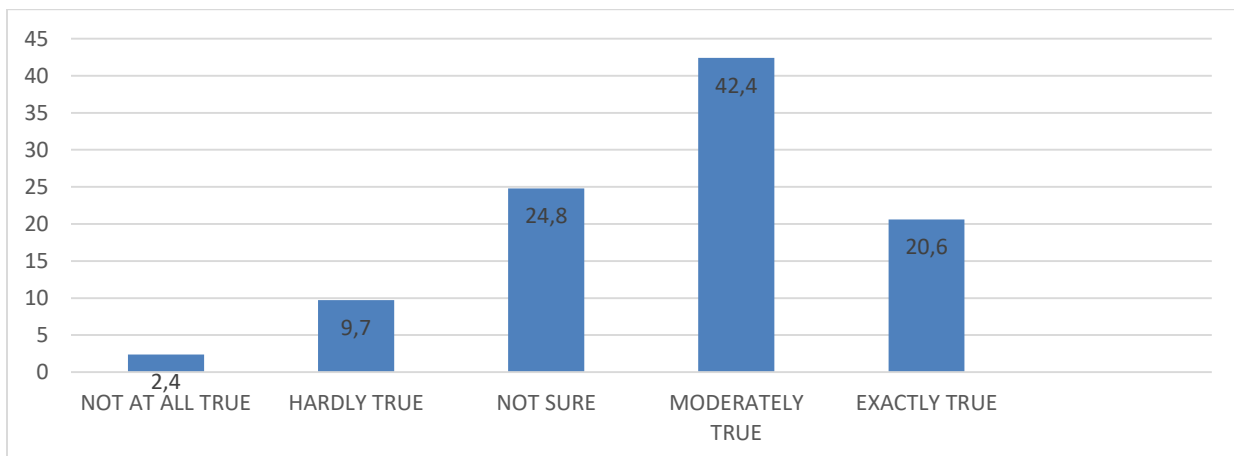
Figure 12 indicated that 4 (2.4%) respondents reported that it is not at all true they are confident and that they could deal efficiently with unexpected events. Sixteen (9.7%) indicated that this was hardly true, while 41(24.8%) indicated they were not sure. Seventy (42.4%) indicated that this was moderately true while 34 (20.6%) indicated that the statement is true they are confident that they could deal efficiently with unexpected events.

Figure 13: Thanks to my resourcefulness, I know how to handle unforeseen situations
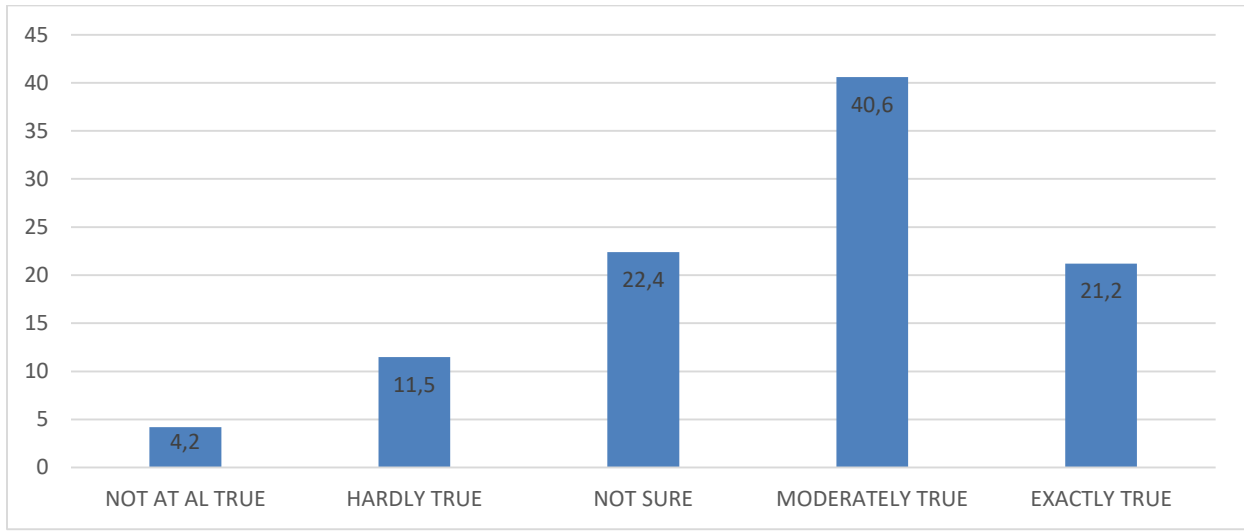
The results shown in figure 13 indicate that 7 (4.2%) respondents found the statement not at all true, in that they did not have the resourcefulness in knowing how to handle unforeseen situations. Nineteen (11.5%) indicated that this was hardly true, 37(22.4%) indicated that they were not sure and 67(40.6%) indicated that the statement was moderately true while lastly 35 (21.2%) indicated that the statement was exactly true.

Frequency table 9: I can solve most problems if I invest the necessary effort

		Frequency	Percent	Valid Percent	Cumulative Percent
	I can solve most problems if I invest the necessary effort.				
Valid	Not at all true	2	1.2	1.2	1.2
	Hardly true	16	9.7	9.7	10.9
	Not sure	23	13.9	13.9	24.8
	Moderately true	76	46.1	46.1	70.9
	Exactly true	48	29.1	29.1	100.0
	Total	165	100.0	100.0	

Frequency table 9 indicates 2(1.2%) that the statement is not at all true in that they cannot solve most problems if they invest the necessary effort. Sixteen 16 (9.7%) indicate that this is hardly true, 23 (13.9%) indicate they are not sure, 76 (46.1%) indicate that the statement is moderately true while 48 (29.1%) indicate that it is exactly true.

Figure 14: I can remain calm when facing difficulties because I can rely on my coping abilities
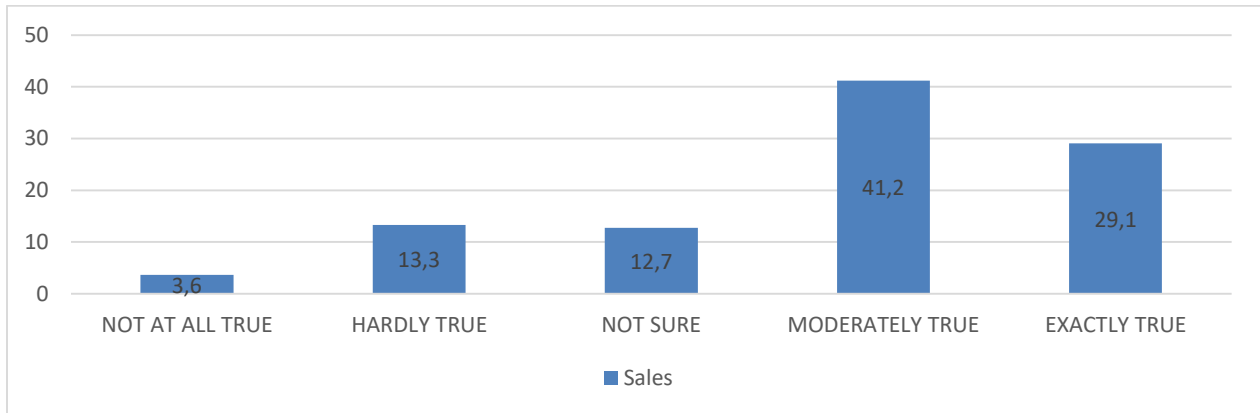
Figure 14 indicates that 6 (3.6%) respondents state that it is not at all true they cannot remain calm when facing difficulties because they can rely on their coping abilities, 22(13.3%) indicated the statement is hardly true, 21(12.7%) stated they were not sure, 68(41.2%) indicated the statement was moderately true while 48 (29.1%) indicated that it was exactly true.

Figure 15: When I am confronted with a problem, I can usually find several solutions
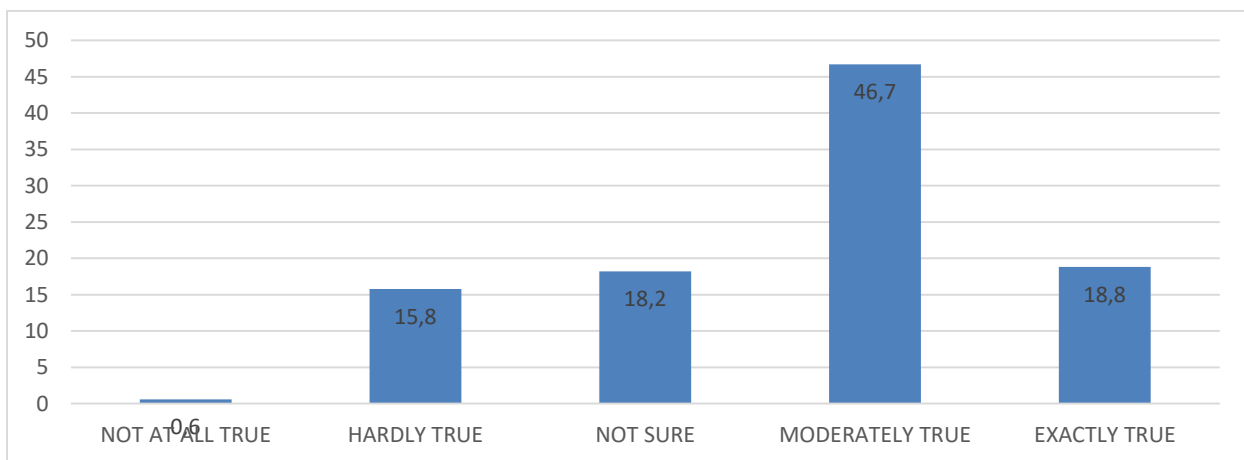
Figure 15 indicated that 1 (0.6%) respondent found that it was not all true that when they are confronted with a problem, they cannot usually find several solutions, 26(15.8%) indicated it was

hardly true, 30(18.2%) indicated they were not sure, 77 (46.7%) indicate it was moderately true while 31 (18.8%) indicated the statement was exactly true. when they are confronted with a problem, they can usually find several solutions.

Frequency table 10: If I am in trouble, I can usually think of a solution

		Frequency	Percent	Valid Percent	Cumulative Percent
	If I am in trouble, I can usually think of a solution.				
Valid	Not at all true	1	0.6	0.6	0.6
	Hardly true	18	10.9	10.9	11.5
	Not sure	25	15.2	15.2	26.7
	Moderately true	83	50.3	50.3	77.0
	Exactly true	38	23.0	23.0	100.0
	Total	165	100.0	100.0	

Frequency table 10 shows that that 1 (0.6%) respondent indicated that it is not at all true that if they are in trouble, they can usually think of a solution, 18(10.9 %) indicated the statement is hardly true, 25 (15.2%) indicated that they were not sure, 83(50.3%) indicated that the statement is moderately true while 38 (23.0%) indicated that it is exactly true.

Figure 16: I can usually handle whatever comes my way
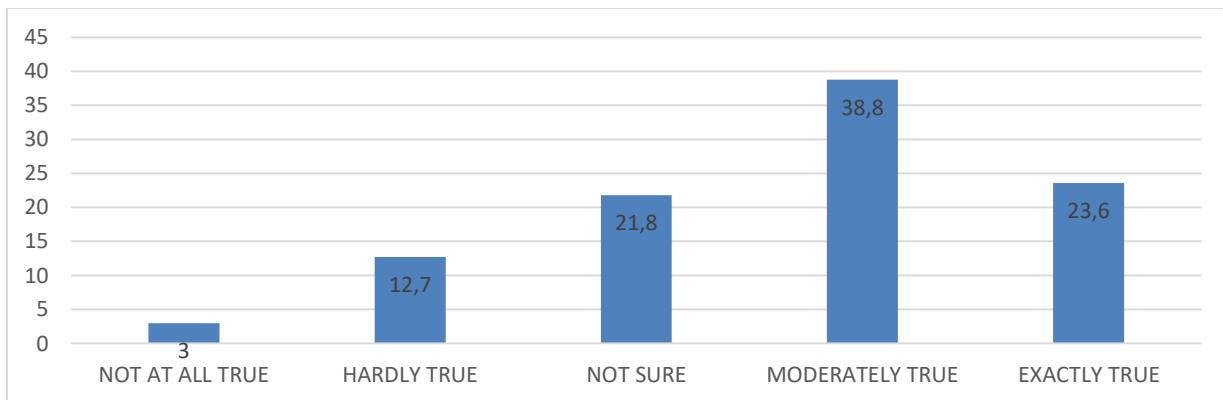
Figure 16 indicates that 5 respondents stated that it is not at all true they can usually handle whatever comes their way, 21 (12.7%) indicated the statement is hardly true, 36 (21.8%) indicated they were not sure, 64 (38.8%) indicated that the statement is moderately true and 39 (23.6%) indicated it is exactly true.

5.5 Attitudes toward marijuana (The Health Belief Model (HBM) Survey)

The attitudes towards marijuana survey underpinned by the Health Belief Model (HBM) was used to understand respondents' attitudes towards marijuana use. The survey measures attitudes related to: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy and cues to action. The results are presented in the next section.

5.5.1 Perceived susceptibility

This category consisted of two questions which are presented below:

Frequency table 11: Routine use of marijuana may negatively affect class attendance

Routine use of marijuana may negatively affect class attendance					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	68	41.2	41.2	41.2
	Agree	56	33.9	33.9	75.2
	Neither agree nor disagree	20	12.1	12.1	87.3
	Disagree	10	6.1	6.1	93.3
	Strongly disagree	11	6.7	6.7	100.0
	Total	165	100.0	100.0	

Frequency table 11 indicates responses to the: Routine use of marijuana may negatively affect class attendance. The results indicate that 68(41.2%) students strongly agreed with the statement that routine use of marijuana may negatively affect class attendance while 56(33.9%) students agreed and 20 (12.1%) neither agreed nor disagreed. Ten (6.1%) students disagreed with the statement while 11(6.7%) strongly disagreed.

Figure 17: <u>Marijuana use increases my chance of using 'harder' drugs</u>
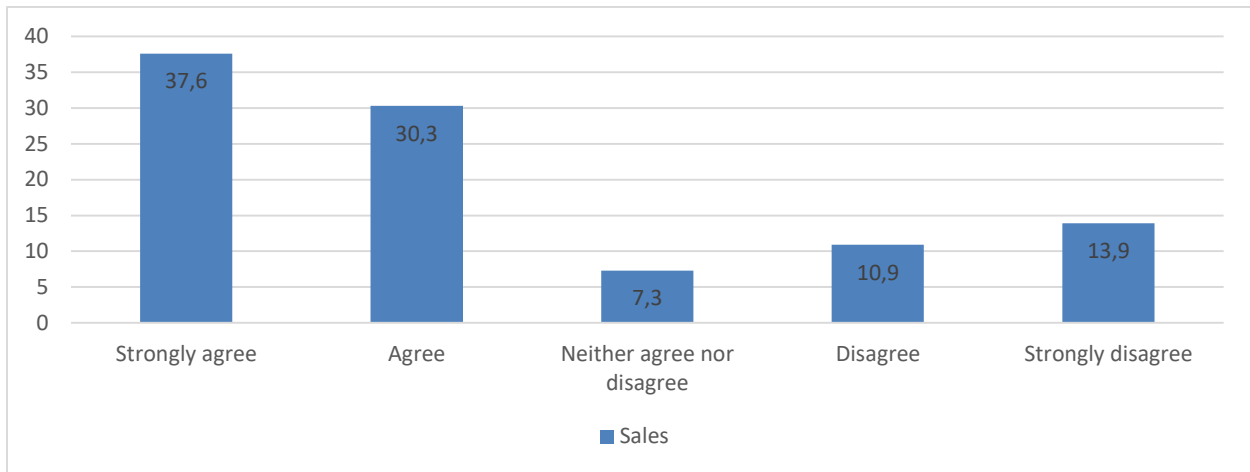
Figure 17 indicates that 62 (37.6) of the respondents strongly agreed with the statement: marijuana use increases chances of one using 'harder drugs', while 50 (30.3%) agreed with the statement and 12 (7.3%) neither agreed nor disagreed. Eighteen 18 (10.9%) respondents disagreed with the statement while 23 (13.9%) strongly disagreed.

5.5.2 Perceived severity

Figure 18: <u>Prolonged marijuana use may lead to a reduction in the ability to concentrate as well as learning and remembering things for academic purposes</u>
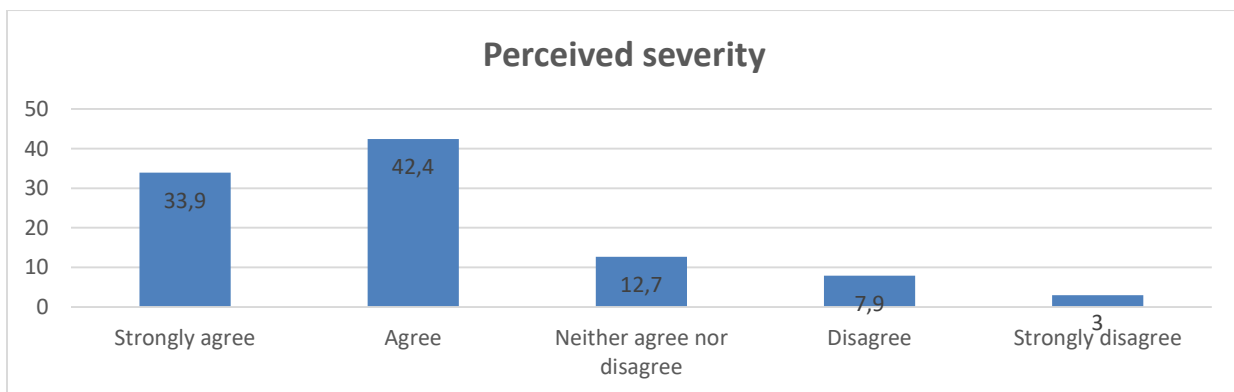
Figure 18 indicates that 56 (33.9%) of the sample strongly agreed that prolonged marijuana use may lead to a reduction in the ability to concentrate as well as learning and remembering things for academic purposes. Seventy (42.4%) respondents agreed with the statement while 21 (12.7%) neither agreed nor disagreed, 13 (7.9%) respondents disagreed and 5 (3.0%) strongly disagreed with the statement.

Frequency table 12: The negative long-term effects of marijuana such as psychological dependence are irreversible

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	50	30.3	30.3	30.3
	Agree	74	44.8	44.8	75.2
	Neither agree nor disagree	20	12.1	12.1	87.3
	Disagree	16	9.7	9.7	97.0
	Strongly disagree	5	3.0	3.0	100.0
	Total	165	100.0	100.0	

Frequency table 12 indicates that 50 (30.3%) respondents strongly agreed that the negative long-term effects of marijuana such as psychological dependence are irreversible, while 74(44.3%) agreed and 20 (12.1%) neither agreed nor disagreed. Sixteen 16 (9.7%) respondents disagreed and 5 (3.0%) strongly disagreed.

5.5.3 Perceived barriers

Figure 19: <u>I believe that my peers will not consider me cool anymore if I quit marijuana</u>
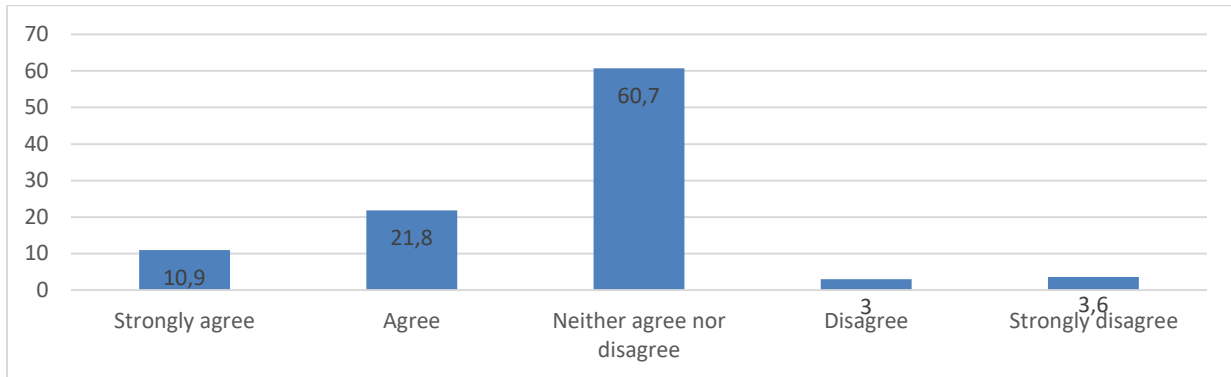
Figure 18 indicates that 18 (10.9%) respondents strongly agreed that they will not be considered cool by their peers if they quit marijuana while 36 (21.8%) agreed with the statement. Ninety (60.7%) respondents neither agreed nor disagreed, 3 (1.8%) disagreed while six (3.6%) strongly disagreed with the statement.

Figure 20: <u>I believe smoking marijuana has no negative implications on user's physical and mental health</u>
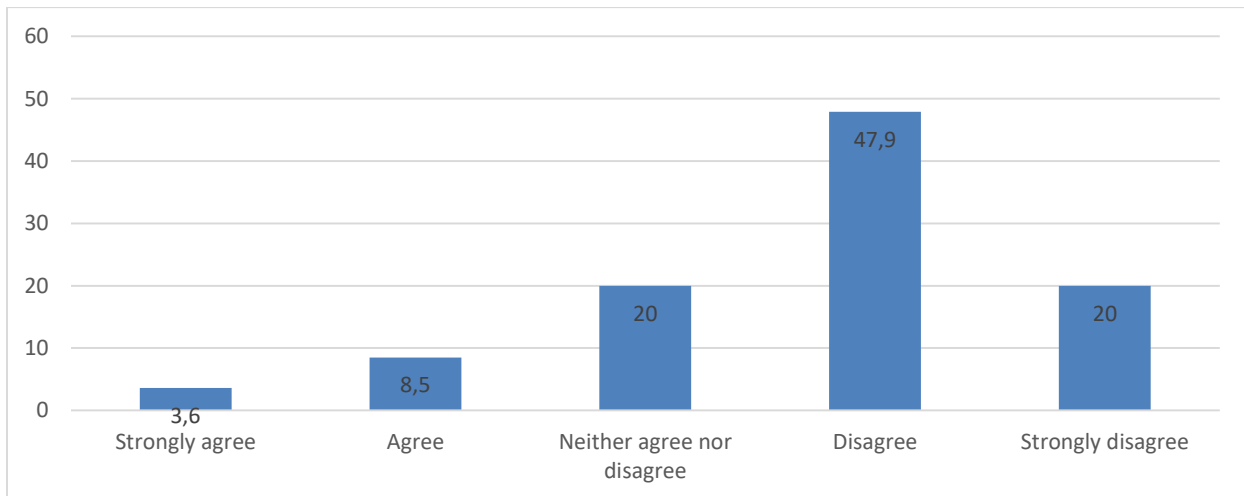
Figure 20 indicates that 6 (3.6%) respondents strongly agreed that marijuana has no negative implications for users physical and mental health, 14 (8.5%) respondents agreed while 33 (20.0%)

neither agreed nor disagreed. Seventy-nine (47.9%) of the sample disagreed while 33 (20.0%) strongly disagreed with the statement.

5.5.4 Perceived benefits

Figure 21: Smokers have a lot to gain from reducing marijuana intake
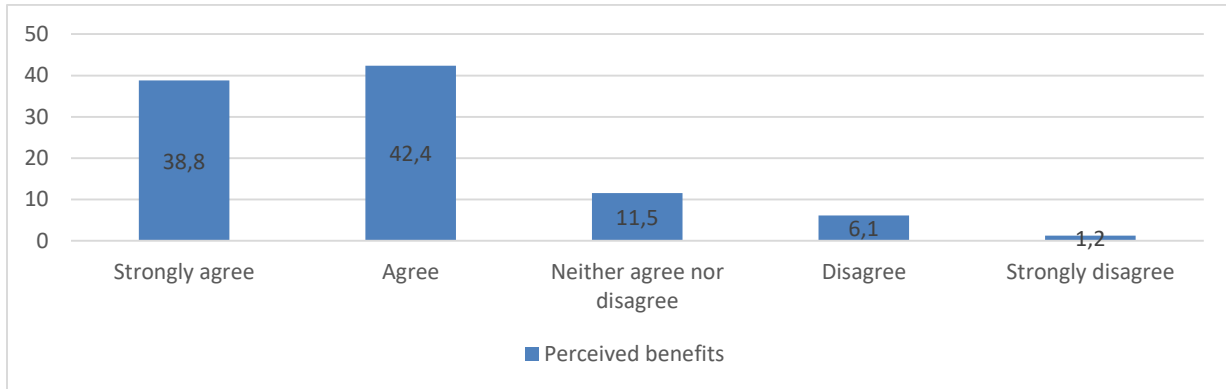
Figure 21 presents the findings for perceived benefits. The figure shows that 64 (38.8%) respondents strongly agreed that smokers have a lot to gain from reducing marijuana intake. Seventy (42.4%) respondents agreed while 19 (11.5%) neither agreed nor disagreed. Ten (6.1%) respondents disagreed, while 2 (1.2%) strongly disagreed with the statement.

Frequency table 13: I believe that marijuana use can be beneficial for health reasons

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	60	36.4	36.4	36.4
	Agree	50	30.3	30.3	66.7
	Neither agree nor disagree	13	7.9	7.9	74.5
	Disagree	30	18.2	18.2	92.7
	Strongly disagree	12	7.3	7.3	100.0
	Total	165	100.0	100.0	

I believe that marijuana use can be beneficial for health reasons.

The results for this statement indicate that 60 (36.4%) respondents strongly agreed that marijuana use can be beneficial for health reasons while 50 (30.3%) students agreed and 13 (7.9%) neither agreed nor disagreed. Thirty (18.2%) students disagreed while 12 (7.3%) strongly disagreed with this statement.

5.5.5 Self-efficacy

Figure 22: I feel confident that if (I was a smoker) I put my mind to it, I can quit
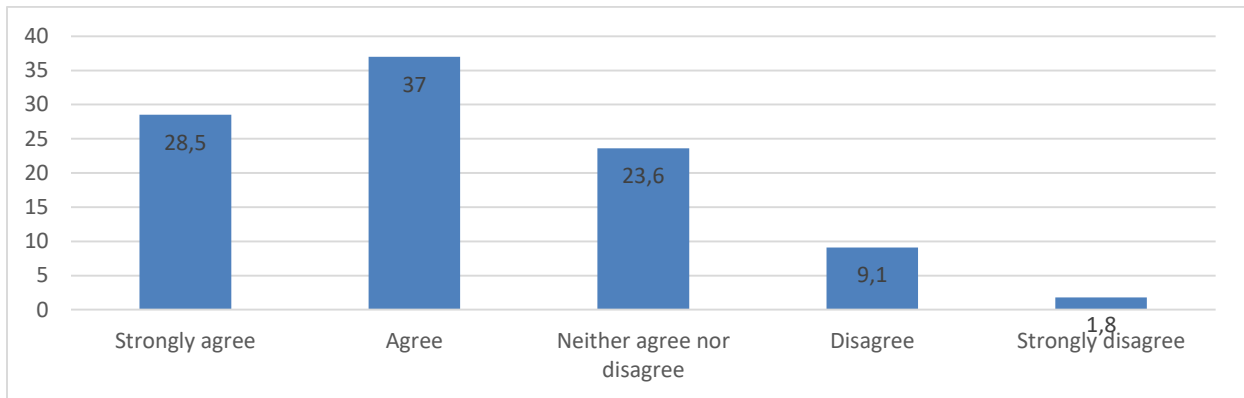
Figure 22 indicates that 47 (28.5%) of the respondents strongly agreed that they feel confident that if (they were smokers) and put their mind to it they could quit. Sixty-one (37.0%) respondents agreed while 39 (23.6%) neither agreed nor disagreed, 15 (9.1%) disagreed while 3 (1.8%) strongly disagreed with the statement.

Figure 23: I feel confident if I was addicted, I would be able to recognise that and ask for help
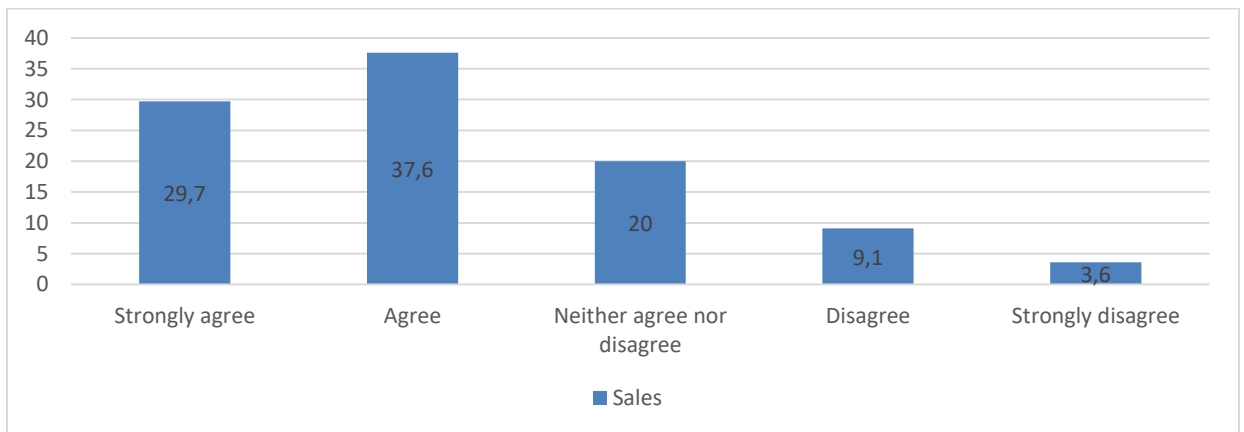
Figure 23 shows that 49 (29.7%) respondents strongly agreed that they feel confident that if they were addicted they would be able to recognise that (they were) and ask for help, 62 (37.6%) agreed

while 33 (20.0%) neither agreed nor disagreed. Fifteen (9.1%) of the respondents disagreed while 6 (3.6%) strongly disagreed with the statement.

5.5.6 Cues to action

Figure 24: Hanging out with none smokers, will reduce marijuana-smoking habits

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Series 1	36,4	35,8	13,3	9,1	5,5
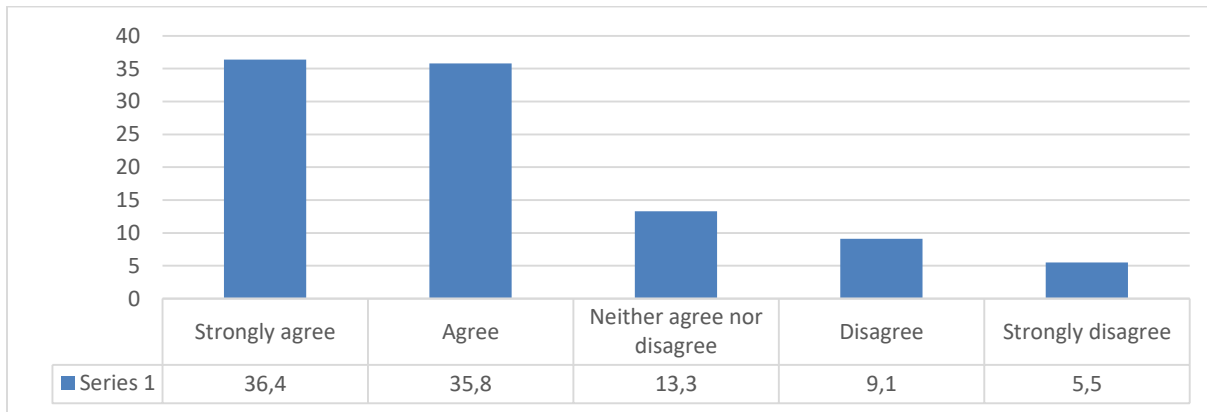
As indicated by figure 24, 60 (36.4%) respondents strongly agreed that hanging out with none smokers will reduce marijuana smoking habits, 59 (35.8%) agreed while 22 (13.3%) neither agreed nor disagreed. Fifteen (9.1%) disagreed while 9 (5.5%) students strongly disagreed with the statement.

Frequency table 14: Reducing marijuana intake increase chances of quitting marijuana completely

Reducing marijuana intake increase chances of quitting marijuana completely.				
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	46	27.9	27.9	27.9
	Agree	81	49.1	49.1	77.0
	Neither agree nor disagree	23	13.9	13.9	90.9
	Disagree	8	4.8	4.8	95.8
	Strongly disagree	7	4.2	4.2	100.0
	Total	165	100.0	100.0	

Table 14 indicates that 46 (27.9%) respondents strongly agreed that reducing marijuana intake increase chances of quitting marijuana completely. Eighty-one (49.1%) respondents agreed while 23 (13.9%) neither agreed nor disagreed. Eight (4.8%) respondents disagreed while 7 (4.2%) strongly disagreed with the statement.

5.6 Results for the independent t-test

Independent t-test table 1: Male students will be more positive in their attitude to marijuana use than female students at the University of Limpopo (marked effects significant p ≤0.05)

	Mean (M)	Standard Deviation (SD)	df	t-statistic	Sig level p ≤0.05)
Male	3.80	1.13			
Female	3.80	1.22	1.63		
				-0.034	0.97

Independent t-test table 1 indicates results on gender differences in terms of attitudes towards marijuana use among male and female third year students. The mean score for males was (3.80; SD, 1.13) and the mean score for females was (3.80; SD, 1.22). The degree of freedom was 1.63, the t-statistic was -0.034 and the significant level p= 0.97. The results indicated that there are no gender differences in attitudes towards marijuana use among third year male and female psychology students.

5.7 Results of the correlation analysis

The Pearson r-correlation co-efficient was used to ascertain any relationship between the self-efficacy of third year psychology students and their attitudes towards marijuana use.

Correlation analysis table 1: <u>There is no relationship between the self-efficacy of students and their attitudes (negative or positive) towards marijuana use at the University of Limpopo (Turfloop Campus).</u>

Correlations		Self-efficacy	Attitudes
Self-efficacy	Pearson Correlation	1	.055
	Sig. (2-tailed)		.486
	N	165	165
Attitudes	Pearson Correlation	.055	1
	Sig. (2-tailed)	.486	
	N	165	165

Table 1 above presents the Pearson Correlation Co-efficient analysis results for the relationship between self-efficacy and attitudes of students towards marijuana use (r=0.055, p =0.486). The results show a weak positive relationship between self-efficacy and negative attitudes of students towards marijuana use. A p value of 0.486 shows that the relationship is not statistically significant as the p value is above the recommended significant p value of 0.05.

5.8 Discussion of research hypotheses and other key findings

The discussion of results is guided by the use of the theoretical framework underpinning the research namely the Health Belief Model (HBM). In addition, the empirical findings of this study will be discussed in comparison with studies referred to in the literature review. The discussion is underpinned by the following hypotheses: **Hypothesis 1:** Male students will be more positive in their attitude to marijuana use than female students at the University of Limpopo (Turfloop Campus) and **Hypothesis 2:** There is no relationship between the self-efficacy of students and their attitudes (negative or positive) towards marijuana use at the University of Limpopo (Turfloop Campus).

Hypothesis 1: Male students will be more positive in their attitude to marijuana use than female students at the University of Limpopo (Turfloop Campus)**.**

In terms of gender differences, the mean score for males was (3.80; SD, 1.13) and the mean score for females was (3.80; SD, 1.22). The degrees were 163, t statistic was -0.034 and the significant level was 0.97. The results showed that there are no gender differences toward marijuana use among third year male and female psychology students Based on the results, it implies that both males and females have the same attitudes towards marijuana use. The results of this study are in agreement with the findings of Malbergier, Cardoso, do Amaral and Santos (2012) who found no gender differences in attitudes towards marijuana use. This corresponds with findings by Malbergier et al. (2012), who found no gender differences on attitudes towards the use of illicit drugs between males and females.

Hypothesis 2: There is no relationship between the self-efficacy of students and their attitudes (negative or positive) towards marijuana use at the University of Limpopo (Turfloop Campus).

This hypothesis was aimed to ascertain whether believing in oneself (self-efficacy) has an influence on the attitudes towards marijuana use. The correlation results (r=0.055, p =0.486) indicated weak positive relationship between self-efficacy and attitudes of students towards marijuana use. Based on this finding the study is not supported as a weak positive relationship was found. Though not statistically significant the result may suggest that a positive self-efficacy is slightly associated with a negative attitude towards marijuana use amongst the respondents.

5.8.1   Other key findings

Nonetheless, there were some results, though not significant, that are worrying. For example, based on marijuana use, 75 (45.5%) of the respondents reported that they had used marijuana. The results indicate high marijuana use among university students at the University. Worryingly, only 18.8% of the students had tried to stop smoking the drug and only 3.6% of the students had considered seeking help for their marijuana use. Another finding was that 121 (73.3%) of the sample understood that marijuana is a mood enhancer. This might explain why there is high marijuana use among students as they believe that it can enhance their mood in a positive way. They are unlikely to understand that it enhances negative moods as well. Other health problems associated with

marijuana use were also identified for example, 15 respondents (9.1 %) had convulsions, delirium tremens (DTs or shaking) and 15.2% of the students agreed that they once had a blackout. It was also discovered that marijuana caused serious problems among some of the sample users. For instance, 13.9% of the students agreed that the drug caused them problems at school and 21.2% of the students who smoked marijuana agreed that they do something they do not normally do such as breaking the law, societal rules and having unprotected sex, which is disturbing. Twenty-five (15.2%) of the respondents have a family member who has a marijuana use problem. This is a key finding as it could indicate that students in the sample, who use marijuana, could have observed that behaviour in a familial situation and copied it. This finding needs more research.

Attitudes towards marijuana use, underpinned by the constructs of the HBM, and were measured using the following constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy and cues to action. In terms of perceived susceptibility, the results indicated that the sample of students held negative attitudes towards marijuana use. In addition, the results show that the students perceive that they can be negatively affected by marijuana. This may have an influence on their attitudes toward marijuana use. This is supported by Skinner, Tiro and Champion (2015) who explained that, individuals who perceive a high risk that they will be personally affected by a particular health problem by participating in a negative behaviour (such as taking drugs), are more likely not to engage in these behaviours. However, there were a notable (though not statistically significant) number of participants that did report a positive attitude towards marijuana use. For instance, 10 (6.1%) students disagreed with the statement that routine use of marijuana may negatively affect class attendance and 11(6.7%) strongly disagreed. According to the HBM the students (21) who hold positive attitudes towards marijuana maybe still in the pre-contemplation phase, where they do not think that a change of behaviour is necessary. They still have to realise this and enter the contemplation phase when individuals recognise the benefits of changing a particular behaviour (in this case smoking or using marijuana).

In terms of perceived severity, the results implied that many of the sample perceive a high risk from marijuana use thus they hold negative attitude towards the drug. This is supported by the HBM which postulates that an individual is more likely to take an action to prevent smoking (tobacco or marijuana) if s/he believes that the possible negative physiological, psychological and social effects from smoking pose serious health related consequences. In terms of perceived

benefits 64 (38.8%) students strongly agreed that users have a lot to gain from reducing marijuana intake. Moreover, 60 (36.4%) think that marijuana use can be beneficial for health reasons. This is true if used medicinally which this study did not explore. This particular finding needs more investigation in order to find out if students perceptions of the health benefits of marijuana are factual or based on 'gossip' and colloquial information.

In terms of perceived barriers, the results imply that some students do not perceive serious barriers in terms of stopping marijuana use. This may be somewhat naïve as the drug is addictive and it is possible the sample do not understand that. According to the HBM, an individual is likely to adopt a certain behaviour for instance, stop using marijuana, if it has benefits (health and social). However, they may not perceive that stopping marijuana use is not as easy as they think. However, there were worrying pointers as 18 (10.9%) students strongly agreed and 36 (21.8%) students agreed that they would not be considered 'cool 'by their peers if they stopped using marijuana.

In terms of self-efficacy, the results show that the students have high self-efficacy. According to Choi et al. (2013), self-efficacy is important in understanding drug use or the ability to turn down peer pressure in using drugs. These authors suggest that people with low self-efficacy are vulnerable in terms of yielding to pressure to take drugs. Furthermore, the authors state that youth should develop strong internal marijuana-resistance self-efficacy (MSE) if the issue of drug abuse is to be eradicated. Considering, cues to action, overall, students agreed that having friendsand peers who do not use marijuana is likely to reduce the drug's use.

5.9 Overall conclusion

This chapter discussed the research findings. The results indicated that overall respondents had had negative attitudes toward marijuana use. The t-test result established no gender difference in attitudes toward marijuana use. A weak positive relationship was found between self-efficacy and attitudes toward marijuana use amongst third year psychology students.

5.10 Methodological strengths of the study

The methodological strengths of the study are:

- A random sample was used thus findings can be generalised to third year students.
- Appropriate statistical analysis was used.

- The questionnaires were standardised thus reliable and valid.

5.11 Methodological weaknesses of the study

- The study utilised a quantitative research design and no qualitative element was used in order to find out how respondents felt about the topic thus no in-depth information was gathered.
- The study only used third year psychology students from one university of Limpopo which is a limitation as the responses cannot fully represent the entire population of students at the University of Limpopo.

5.12 Recommendations arising out of the research

The study makes the following recommendations:

- Results about marijuana use showed a high level (45.5%) of marijuana use among third year psychology students. Therefore, it is recommended that the University of Limpopo should organise workshops where awareness is shared with students about the dangers of marijuana in order to reduce use among students.
- The University of Limpopo (Turfloop campus) should have a pamphlet available at outlets like the main gates, clinic and library informing students of problems associated with marijuana use and different ways they can use to avoid pressure to try the drug.

5.13 Recommendations for future research

The study recommends of the research are as follows:

- A mixed method research design study investigating the attitudes and perceptions towards marijuana use among all university undergraduate and post-graduate students at the University of Limpopo (Turfloop Campus).

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APPENDIX A: SURVEY QUESTIONNAIRE

QUESTIONNAIRE FOR ATTITUDES OF THIRD YEAR PSYCHOLOGY STUDENT AT THE UNIVERSITY OF LIMPOPO (TURFLOOP CAMPUS) TOWARDS THE USE OF MARIJUANA.

The purpose for this questionnaire is to gather information about attitudes of third year psychology students at the University of Limpopo (turfloop campus) towards the use of marijuana. Please answer the questions as honestly as possible. Remember that there is no right or wrong answer. Your responses will be treated confidentially and anonymous. In order to know more about attitudes of third year psychology students at the University of Limpopo (turfloop campus) towards the use of marijuana, your contribution in this research is valued. Therefore, you are kindly requested to provide the researcher in this questionnaire with accurate information.

Your participation will be voluntary, should you wish to withdraw you can do so. Please do not write your name or students number on this paper. A computer will be used to process your responses. **Thank you for your participation in any case.**

SECTION A: DEMOGRAPHIC INFORMATION

Please make a tick (√) in the appropriate box provided or write in the answer.

1. Gender

Male	1
Female	2

2. Age

17-20	1
21-25	2
26-30	3
31-40	4

3. Ethnicity

African	1
White	2
Coloured	3
Indian	4

4. Religion

Christian	1
Islam	2
Jewish	3
Traditional	4
Other	5

5. Have you repeated any undergraduate year level? If yes which one(s)

Yes	1	
No	2	

SECTION B: SIMPLE SCREENING INSTRUMENT FOR MARIJUANA AND MARIJUANA KNOWLEDGE SURVEY

Directions: The questions that follow are about your use of Marijuana. Your answers will be kept private. Mark with (√) the response that best fits for you. **If you have not used Marijuana do not answer these questions.**

	YES	NO
7. Have you used marijuana?	1	2
8. Have you felt that you use too much marijuana?	1	2
9. Have you tried to cut down or quit smoking marijuana?	1	2
10. Have you gone to anyone for help because of your marijuana smoking? (Such as Narcotics Anonymous, Cocaine Anonymous, counsellors, or a treatment programme.)	1	2
Have you had any of the health problems below? For example, have you:		
11. Had blackouts or other periods of memory loss?	1	2
12. Injured your head after smoking?	1	2
13. Had convulsions, delirium tremens ("DTs" or shaking)?	1	2
14. Had hepatitis or other liver problems?	1	2
15. Felt sick, shaky, or depressed when you stopped?	1	2
16. Felt "coke bugs" or a crawling feeling under the skin after you stopped using marijuana?	1	2
17. Been injured after smoking?	1	2
18. Used needles to shoot drugs?	1	2
19. Has your marijuana use caused problems between you and your family or friends?	1	2
20. Has your marijuana use caused problems at school?	1	2
21. Have you been arrested or had other legal problems?	1	2

	1	2
22. Have you lost your temper or gotten into arguments or fights while smoking marijuana?	1	2
23. Do you need to use marijuana more and more to get the effect you want?	1	2
24. Do you spend a lot of time thinking about or trying to get marijuana?	1	2
25. When smoking marijuana, are you more likely to do something you wouldn't normally do, such as break rules, break the law, sell things that are important to you, or have unprotected sex with someone?	1	2
26. Do you feel bad or guilty about your marijuana use?	1	2
The next questions are about your lifetime experiences.		
27. Have you ever had a marijuana problem?	1	2
28. Have any of your family members ever had a marijuana use problem?	1	2
29. Do you feel that you have a marijuana use problem now?	1	2

QUESTIONS RELATED TO KNOWLEDGE ABOUT MARIJUANA: Response Format - Please mark using (√) in the appropriate block

	YES	NO
30. Tetrahydrocannabinol is a substance found in marijuana?	1	2
31.Marijuana affects brain function negatively particularly the hippocampus?	1	2
32. Marijuana is addictive?	1	2
33. A person who has smoked marijuana may have difficulty keeping his or her balance?	1	2

34. A student who smokes marijuana may do poorly on a test given the next day because of marijuana's effect on the brain?	1	2
35. Marijuana is a plant?	1	2
36. Marijuana leaves are stronger than the seeds?	1	2
37. Marijuana can be mixed with other drugs (prescription and non-prescription)?	1	2
38. Marijuana is a mood enhancer?	1	2
39. Marijuana and alcohol do not have an effect on each other?	1	2

SECTION C: GENERAL SELF-EFFICACY SCALE: Response Format - Please mark using (√) in the appropriate block

Questions	Not at all true	Hardly true	Not sure	Moderately true	Exactly true
40. I can always manage to solve difficult problems if I try hard enough	1	2	3	4	5
41. If someone opposes me, I can find the means and ways to get what I want	1	2	3	4	5
42. It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4	5
43. I am confident that I could deal efficiently with unexpected events.	1	2	3	4	5
44. Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4	5

45. I can solve most problems if I invest the necessary effort.	1	2	3	4	5
46. I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4	5
47. When I am confronted with a problem, I can usually find several solutions.	1	2	3	4	5
48. If I am in trouble, I can usually think of a solution.	1	2	3	4	5
49. I can usually handle whatever comes my way.	1	2	3	4	5

SECTION D: A HEALTH BELIEF MODEL SURVEY OF ATTITUDES OF STUDENTS TOWARDS MARIJUANA USE

Please make a tick (√) in the appropriate box or write in the answer

1. Perceived susceptibility	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
50. Routine use of marijuana may negatively affect class attendance.	1	2	3	4	5
51. Marijuana use increases my chances of using "harder" drugs.	1	2	3	4	5

3. Perceived severity	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
52. Prolonged marijuana use may lead to a reduction in the ability to concentrate as well as learn and remember things for academic purposes.	1	2	3	4	5
53. The negative long term effects of marijuana such as psychological dependence are irreversible.	1	2	3	4	5

4. Perceived Barriers	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
54. I believe that my peers will not consider me cool anymore if I quit Marijuana.	1	2	3	4	5
55. I believe smoking Marijuana has no negative implications on user's physical and mental health.	1	2	3	4	5

5. Perceived benefits	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
56. Smokers have a lot to gain from reducing marijuana intake.	1	2	3	4	5
57. I believe that marijuana use can be beneficial for health reasons.	1	2	3	4	5

6. Self-efficacy	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
58. I feel confident that if I put my mind to it, I can quit.	1	2	3	4	5
59. I feel confident if I was addicted I would be able to recognize that and ask for help.	1	2	3	4	5

7. Cues to action	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
60. Hanging out with none smokers will reduce marijuana-smoking habits.	1	2	3	4	5

61. Reducing marijuana intake increase chances of quitting marijuana completely.	1	2	3	4	5

THANK YOU FOR FILLING OUT THIS QUESTIONNAIRE

APPENDIX B: Research ethical clearance certificate

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 3935, Fax: (015) 268 2306, Email: Anastasia.Ngobe@ul.ac.za

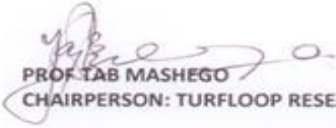**TURFLOOP RESEARCH ETHICS**
COMMITTEE CLEARANCE CERTIFICATE

MEETING:	06 April 2018
PROJECT NUMBER:	TREC/52/2018: PG
PROJECT:	
Title:	Attitudes of third year psychology students at the University of Limpopo (Turfloop Campus) towards the use of Marijuana.
Researcher:	M Mafumo
Supervisor:	Prof S Govender
Co-Supervisors:	Prof KA Nel
School:	Social Sciences
Degree:	Master of Arts in Clinical Psychology

PROF TAB MASHEGO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: REC-0310111-031

Note:
i)   Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
ii) The budget for the research will be considered separately from the protocol.
PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

APPENDIX C: Research ethics approval

University of Limpopo
Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 4029, Fax: (015) 268 2306, Email:Abdul.Maluleke@ul.ac.za

21 February 2018

N Mafumo
School of Social Sciences
UNIVERSITY OF LIMPOPO

Dear Mr/Ms Mafumo

APPLICATION FOR ETHICS APPROVAL

Researcher:	**N Mafumo**
Title:	**Attitudes of third year psychology students at the University of Limpopo (Turfloop Campus) towards the use of Marijuana**
Supervisor:	**Prof S Govender -** University of Limpopo
Co-Supervisor:	**Prof K Nel** – University of Limpopo
Served at TREC on:	07 February 2018
Decision of TREC:	**Conditionally approved:**

Conditions:

1. The table of contents needs to be revised to ensure that it is aligned with the contents of the proposal
2. The researcher will need to acquire gatekeeper's permission from Registrar after ethical clearance is granted by TREC

AF Maluleke
Secretary: Turfloop Research Ethics Committee
CC: Prof TAB Mashego: Chairperson: Turfloop Research Ethics Committee

Finding solutions for Africa

APPENDIX D

TURFLOOP RESEARCH ETHICS COMMITTEE

Date: 30.08.2018

<p align="center">FORM B – PART I</p>

PROJECT TITLE: ATTITUDES OF THIRD YEAR PSYCHOLOGY STUDENTS AT THE UNIVERSITY OF LIMPOPO TOWARD USE OF MARIJUANA.

PROJECT LEADER: Masindi Mafumo

DECLARATION

I, the signatory, hereby apply for approval to conduct research described in the attached research proposal and declare that:

1. I am fully aware of the guidelines and regulations for ethical research and that I will abide by these guidelines and regulations as set out in documents (available from the Secretary of the Ethics Committee); and

2. I undertake to provide every person who participates in this research project with the relevant information in Part III. Every participant will be requested to sign Part IV.

Name of Researcher: M Mafumo

Signature: **Mafumo M…………………………………**

Date:30/08/2018…………………………………………

FORM B - PART II

PROJECT TITLE: Attitudes of third year psychology students at the University of Limpopo toward use of Marijuana.

PROJECT LEADER: Miss M Mafumo

Protocol for conducting research using human participants

1.   Department: Psychology

2.   Title of project: **ATTITUDES OF THIRD YEAR PSYCHOLOGY STUDENTS AT THE UNIVERSITY OF LIMPOPO TOWARD USE OF MARIJUANA.**

3.   Full name, surname and qualifications of project leader: Miss M Mafumo: BA Hons Psychology and Bachelor of Social Work (UL).

4.   List the name(s) of all persons (Researchers and Technical Staff) involved with the

project and identify their role(s) in the conduct of the experiment:

Name: Qualifications:

Mafumo M   BA Honours in Psychology

                               Bachelor of Social Work

Responsible for: All the research

5.   Name and address of principal researcher: Miss M Mafumo

6.   Procedures to be followed: as noted in the proposal. Participants will also be told that they may withdraw from the research at any time.

7.   Nature of discomfort: The self-report survey could trigger sad memories that could cause anxiety and anger. Affected participants will be referred to clinical psychologist for intervention.

8.   Description of the advantages that may be expected from the results of the study: The study may help in understanding attitudes of third year psychology students at the University of Limpopo toward use of Marijuana.

Signature of Project Leader: Mafumo M……………………………………………

Date:30/08/2018…………………

INFORMATION FOR PARTICIPANTS

PROJECT TITLE: **ATTITUDES OF THIRD YEAR STUDENTS AT THE UNIVERSITY OF LIMPOPO TOWARD USE OF MARIJUANA.**

PROJECT LEADER: Miss M Mafumo

1.   You are invited to participate in the following research project: (see consent form below)

2.   Participation in the project is completely voluntary and you are free to withdraw from the project (without providing any reasons) at any time.

3.   It is possible that you might not personally experience any advantages during the project, although the knowledge that may be accumulated through the project might prove advantageous to others.

4.   You are encouraged to ask any questions that you might have in connection with this project at any stage. The project leader and her/his staff will gladly answer your question. They will also discuss the project in detail with you.

5.   Participants may be anxious and feel traumatised by filling in the questionnaires. Any participant who feels this way will be referred to the correctional services psychologist/counsellor.

6.   Should you at any stage feel unhappy, uncomfortable or is concerned about the research, please contact **Ms Noko Shai-Ragoboya at the University of Limpopo, Private Bag X1106, Sovenga, 0727, tel: 015 268 2401**.

CONSENT FORM

PROJECT TITLE: ATTITUDES OF THIRD YEAR STUDENTS AT THE UNIVERSITY OF LIMPOPO TOWARD USE OF MARIJUANA.

PROJECT LEADER: Miss M Mafumo

I, **_____**
hereby voluntarily consent to participate in the following project: **ATTITUDES OF THIRD YEAR STUDENTS AT THE UNIVERSITY OF LIMPOPO TOWARD USE OF MARIJUANA.**

I realise that:

1.   The study deals with my attitude as a third year registered student at the University of Limpopo toward use of Marijuana.

2.   The procedure or treatment envisaged may hold some risk for me that cannot be foreseen at this stage.

3.   The Ethics Committee has approved that individuals may be approached to participate in the study.

4.   The research project, ie. the extent, aims and methods of the research, has been explained to me.

5.   The project sets out the risks that can be reasonably expected as well as possible discomfort for persons participating in the research, an explanation of the anticipated advantages for myself or others that are reasonably expected from the

research and alternative procedures that may be to my advantage.

6.   I will be informed of any new information that may become available during the research that may influence my willingness to continue my participation.

7.   Access to the records that pertain to my participation in the study will be restricted to persons directly involved in the research.

8.   Any questions that I may have regarding the research, or related matters, will be answered by the researcher/s.

9.   If I have any questions about, or problems regarding the study, or experience any undesirable effects, I may contact a member of the research team or Ms Noko Shai-Ragoboya.

10. Participation in this research is voluntary and I can withdraw my participation at any stage.

11. If any medical problem is identified at any stage during the research, or when I am vetted for participation, such condition will be discussed with me in confidence by a qualified person and/or I will be referred to my doctor.

12. I indemnify the University of Limpopo and all persons involved with the above project from any liability that may arise from my participation in the above project or that may be related to it, for whatever reasons, including negligence on the part of the mentioned persons.

SIGNATURE OF RESEARCHED PERSON_____

SIGNATURE OF WITNESS_____

SIGNATURE OF PERSON THAT INFORMED SIGNATURE OF

PARENT/GUARDIAN

THE RESEARCHED PERSON _____

Signed at_____ this _____ day of _____ 20__

APPENDIX E: (Krejcie & Morgan, 1970).

Table for determining sample size - To simplify the process of determining the sample size for a finite population, Krejcie & Morgan (1970), came up with a table using sample size formula for finite population.

Table 3.1

Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

Note: N is Population Size; S is Sample Size   Source: Krejcie & Morgan, 1970