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Alcohol and other drugs: prevalence, demographic characteristics and perceived effects on the academic performance of high school students within the Mogalakwena Municipality of Limpopo Province.

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CHAPTER ONE
INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Today, all over the world the problem of alcohol and other drugs use by adolescents, and especially amongst school learners is recognised as one of the greatest challenges of our time. In South Africa, use of alcohol and other drugs have long been recognised as a major health and social problem of a democratic South Africa[1].

South Africa is still a country in transition, having recently emerged from a long period of oppression and racial segregation. This liberation has brought with it a lot of political, economic, and social transformation. While many feel liberated and are still basking in the euphoria of freedom, others, many previously advantaged now feel alienated. This kind of milieu has provided a fertile ground for various adjustments for all, but more so for adolescents who have to deal with their own peculiar life stage, in addition to the confusing environment. Faced with these situations, adolescents may then turn to alcohol and other psychoactive drugs as a way of escape or coping. According to Visser[2], 2003, historically, when a country is going through sudden and massive socio-economic and or political changes, as is the case with South Africa, such changes almost always will resonate as increased risk behaviours.

1.2 THE DANGER ASSOCIATED WITH EARLY EXPOSURE TO ALCOHOL AND OTHER DRUGS

A World Health Organization report[1] suggests that most adult problems, like smoking, alcoholism, drug abuse and risky sexual behaviours start early in life, usually beginning in adolescence and for many, this is also the time when they are in high school. Research also suggests that young people tend to use substances in more dangerous ways than adults[1], which put them at higher risk for the development of substance use disorders and complications. Besides the issue of drug use disorders and complications, the adolescence years represents the transitional period between childhood and adulthood. What people become of in adulthood, what lifestyle choices they would make and ability to compete favourably for life opportunities depend largely on how the adolescence stage is managed. This is also the stage that determines to a large extent future educational attainment and life skills development, including sports and recreational activities and relationships.

1.3 ADOLESCENTS' ALCOHOL AND OTHER DRUGS USE IN SOUTH AFRICA

The use and abuse of alcohol and other drugs among South African youths and especially among high school learners has become a serious cause for concern among educators and educational administrators recently. There have been numerous reports in the electronic and print media about learners drinking and or selling drugs even during school hours, teachers sharing alcohol containing beverages and drugs with their students and several incidents of rapes and vandalism following binges of alcohol and drugs. Such is the magnitude of the problem that the Government had become so concerned that it was even considering random searches in schools. Many researchers have expressed fears about the economic impact of these abuses [3, 4, 5,6].

Several reports in the literature indicate that the prevalence and intensity of these indulgences is much lower in the developing world, including South Africa, than what is obtained in the industrialized societies[7]. However, while trends in the developed world appear to be levelling up, and in many cases dropping the problem is escalating in the developing world[8]. According to the results of the 2002 high school survey[9] it was reported that almost half of learners reported ever having drunk alcohol, with about a third of them reporting that they have smoked cigarette at least once in their lives, about a quarter reported binge drinking and over ten percent reported they have used dagga at least once in their lives.

1.4 RATIONALE FOR THE STUDY

According to Pluddeman[10], although the issue of alcohol and other drugs use has received wide publicity, perhaps even more than crime, yet it appears it is the least understood in the South African society. Use of alcohol and even abuse of it appears to have been accepted almost as normal in the society. At the community level, most parents do not have the knowledge to identify that their children may be using alcohol and other drugs. Rebelliousness and other abnormal behaviours in adolescents are viewed as normal. Besides, many parents say they do not have the authority to discipline their children because they have been disempowered by government legislations.

In addition, another reason for the study is the fact that there is still a paucity of research in the field of alcohol and other drugs use, especially amongst school learners in South Africa. The limited number of studies undertaken in South Africa that touch on the subject of the impact of substance use by adolescents on academic performance have touched the subject only on the periphery, except for only two, and even for these two, the main foci was on other issues. Besides, the fact is that alcohol and other drugs use pattern change over time and, therefore, require continuous study about the pattern and types of drugs prevalent at each

point in time. This will be of use to those involved in planning campaigns and other policy issues aimed at curbing these habits.

1.5 AIM: To determine the prevalence, demographic characteristics for Alcohol and other Drug use and self-reported impact of such uses on the academic performance of high school students in the Mogalakwena Municipality.

1.6 OBJECTIVES OF STUDY

- To determine the prevalence of alcohol and other drug use among high school students in the Mogalakwena municipality
- To assess whether any association exists between alcohol and other drugs use and various socio-demographics of high school students in the Moglakwena municipality
- To determine the students' perception of the influence of smoking, drinking and drug use on their academic performance.
- To assess differences in perceived academic impact between urban and rural schools.
- To determine what may influence high school students in the Mogalakwena municipality quit use of alcohol/drugs

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter is going to be discussed in nine sections. These sections will include the following: The scale of the problem of adolescent substance abuse-Global perspective, adolescent' substance use in Africa, smoking and burden of disease-the world at a glance, smoking and burden of disease in South Africa, declining smoking amongst American adolescents, smoking among South African learners still on the rise, global burden of alcohol use, alcohol use and its attendant problems in South Africa, alcohol use during pregnancy in South Africa, declining alcohol use amongst American adolescents, alcohol use among South African learners still on the rise ,illicit drugs use and attendant problems in South Africa, dagga use amongst American high school learners still high but use of other drugs show continuous decline, illicit drugs use among South African learners still on the rise, alcohol and other drugs use and academic performance: introduction alcohol and other drugs use and academic performance globally, alcohol and other drugs use and academic performance in South Africa and urban-rural use substance use difference.

2.2 THE SCALE OF THE PROBLEM OF ADOLESCENTS' SUBSTANCE USE-THE GLOBAL PERSPECTIVE

Many studies in the USA and other parts of the world have shown high levels of alcohol and other drugs use among adolescents. Johnson, Bachman, O' Malley[11] in 1980 reported a high prevalence of 60% dagga use among high school seniors, with 9% saying they used dagga daily. They also reported that 93% of the 16,000 high school students interviewed admitted to trying alcohol at least once in their lives, 72% reported use within the last month and 6% using alcohol daily. In addition, they reported that 40% have used other drugs other than dagga. According to the report of the Monitoring the Future (MTF) survey of 2003[12], 75% of American high school students indicated that they had consumed alcohol at least once in their life time. 45% had had alcohol in the past 30 days prior to survey; a little over 28% were episodic binge drinkers. In 1999 Johnston et al[13] reported that in the 25 years following the inception of the Monitoring the Future surveys the figures had been swinging between plateaus and troughs. They noted that there was a surge in adolescent substance use and abuse in the late 1970's; then dropping considerably to a low in 1992 and then the figures rising

again considerably over the next decade. Between 1992 and 1998 they reported a doubling in the use of dagga by adolescents across the United States.

In the European school survey, data collection was done on substance use among 15 -16 years in 35 European countries[14]. In the 2007 survey over 100,000 students from 35 European countries participated in the survey. The authors reported that alcohol remains the major substance of abuse from the 2007 survey. In all the countries, two thirds of the students have drunk alcohol at least once in their lifetime. On the average, 90% of students had had at least one drink in their lifetime. The percentage of students who reported using alcohol in the past 12 months was 82% and in the past 30 days, the figure was 61%. It was stated that this figures have remained relatively steady since 1995. There was also great variability between countries for example past 30 days alcohol use was reported at 80% by students in Austria and Denmark but the figure was only 35% in Armenia and 31% in Iceland. In terms of illicit drug use on the average 23% of boys and 17% of girls reported that they have tried at least one illicit drug in their lifetime. Here too, there was great variability between countries, for instance in the Czech Republic, about 46% of students reported that they have used illicit drugs, 33% reported so in France, Switzerland, Slovak Republic, while only 6% of students in Norway, Romania and Cyprus reported use of any illicit drug in their lifetime. Generally, rates reported were lower in the Nordic countries and Eastern Europe. Cannabis was the commonest drug of use reported in all countries. The increase in the use of illicit drugs observed between 1995 and 2003 had slowed, levelled up and in a few instances decreasing noted the report. Cigarette smoking was also high among the students in all participating countries. On the average, 58% of students reported that they had tried cigarette at least once in their lifetime while 29% reported use in the past 30 days. There was also great variability between countries for instance in Austria, Bulgaria, the Czech Republic and Latvia the reported rate of use in the past 30 days ranged from 40% to 45%, while in Portugal, Norway, Iceland and Armenia it ranged between 7% to 9%. On the average smoking was observed to have dropped by 4 points between 1995 and 2007. About halve of the students reported that they have been drunk at least once in their lifetime. In 39% of them, they have been drunk at least once in the past year and 18% have been drunk at least once in the past 30 days. On average, 43% of student reported episodic heavy drinking which has been increasing since 1995. Survey included 46,097 from 389 secondary schools. Students were drawn from grades 10 – 12.

2.3 ADOLESCENTS' ALCOHOL AND OTHER DRUGS USE IN AFRICA

A recent review by Odejide[15] indicated that although locally brewed alcohol, cannabis and khat have been used in Africa for centuries, the use of other psychoactive drugs were unknown before the introduction of prescriptive drugs into the continent. He contended that Africa with her multiple problems of wars, poverty, famine and poor governance has provided a fertile ground where alcohol and other drugs of abuse with their attendant "ills thrive''. He also wrote that people in their abject poverty and misery take drugs to escape from their difficult live situation by feeling better, but actually further impoverishing themselves, and this contributes to the destabilization and destruction of families and their societies at large. He further lamented that in most African countries, children aged 15 years and below make up 40%-50% of the population, and that this group of whom a large percentage are already bread winners for their families are the most vulnerable to substance use and effects. Pelzer[16], recently analysed data from six African countries: Zambia, Kenya, Uganda, Swaziland, Namibia and Zimbabwe. Students were drawn from grades 6, 7, 8, 9 and 10 and sample size was 20,765 students. This was part of the Global school based Health survey. He reported 12.6% past month tobacco use, 6.6% alcohol use at harmful or potentially harmful levels (2 or more per day for at least 20 days in the past 30 days) and 10.5% use of illicit drug_(3 or more time ever). In one study in Nigeria, Igwe and his colleagues[17] examined the pattern and prevalence of substance use among secondary students in the Enugu metropolis, Enugu state, Nigeria. Nine Hundred (900) students were recruited from a sample frame of 8,856 in the participating schools. The students involved were drawn from both public and private schools. Students ranged in age between 13 and19 years. The substances under investigation were alcohol, dagga, cocaine, tobacco, amphetamine or other stimulants, phencyclidine, LSD, inhalants, sedatives, tranquillizers, opiates, kola nuts (cola nitida) and coffee. 860 students returned completed usable questionnaires (response rate 95%). Lifetime use of any substance was 29.5%. Alcohol abuse was top with 31.6% and dagga was the least (4.1%). Data was analysed for only alcohol, coffee, cola nuts, cigarette, inhalants, tranquillizers and dagga. Males were found to abuse all substances more than females, except for inhalants and tranquillizers. There was no significant difference in the use of alcohol between the different age ranges. 75% of students who indicated using any substance were using more than one substance. In another study conducted in Harare, Zimbabwe as part of the Global school based Health Survey, Rudatsikira and his colleagues[18] analysed a sample of 1 984 students. Here, the agents under investigation were illicit drugs – dagga or glue, alcohol and cigarette. Females constituted 50.7% and male 49.3%; 15yr olds

constituted 30.3% of participants. School response rate was 100% and students' response rate 84%. The questionnaires were administered by the school teachers in the participating schools. They reported that 13.4% of male and 4.9% of female participants reported ever using dagga or glue. More males used drugs than females. Dagga or glue positively predicted cigarette smoking and alcohol drinking and sexual intercourse. The limitation in this study is that despite assurances of confidentiality, having the questionnaires administered by teachers may be a serious drawback as students; especially the "bad ones" would be scared that they may be identified, so they would be less likely to tell the truth about their substance use.

2.4.0 SMOKING

2.4.1 SMOKING AND BURDEN OF DISEASE- THE WORLD AT A GLANCE

The World Health Organization estimated that in the year 2000, smoking was responsible for an estimated 4.9 million deaths worldwide[19]. The report also indicated that the use of tobacco in all forms was responsible for 4.1% of disability adjusted life years in the year 2000. The worrying aspect, according to the report is the fact that 61% of the disability adjusted life years occurred within the most productive years of 15 to 59 years age groups. Globally smoking was responsible for 71% of lung cancer, 42% of chronic respiratory diseases and 10% of cardio-vascular diseases. It was also responsible for 12% of male deaths and 6% of deaths in females. It is estimated that tobacco use was responsible for 5.1 million deaths in 2004. Peto estimated that by the year 2025 tobacco use may be responsible for about 10 million deaths annually[20]worldwide. In their report in the year 2000, the United States Department of Health and Human Services[21] reported that deaths resulting from smoking related diseases exceeded the deaths resulting from motor vehicle accidents, fires, suicide, homicide, AIDS and abuse of alcohol and other drugs combined.

2.4.2 SMOKING AND BURDEN OF DISEASE IN SOUTH AFRICA

Research findings from the emerging world economies, such as South Africa suggest that deaths from smoking result mainly from respiratory diseases such as chronic obstructive pulmonary diseases and tuberculosis. However, in one study in South Africa by Pacella-Norman and his colleagues[22]data was extracted from an on-going study of the risk factors for oesophageal cancer, oral and laryngeal cancer. 267 men and 138 women with oesophageal cancer, 105 men and 41 women with cancer lungs, 87 men and 37 women with oral cavity cancer and 51 men with laryngeal cancer were compared with 804 men and 1370 women

having cancers not known to be associated with alcohol or tobacco use. Their analysis indicated that tobacco use was the strongest risk factor for all the four cancers. Frequent alcohol consumption alone only showed marginal increase in oesophageal cancer. However, when combined with smoking the OR increased significantly to OR 4.7 in males and 4.8 in females. In another study, still in South Africa, Sitas and his colleagues[23] carried out a review of death notification form of people who died from 1998 for whatever reason and these were analysed. Comparison was then made between those who died from known causes from other studies that were said to be casually associated with smoking and those people who died from causes unrelated to smoking. Relatives had provided history of smoking for 5340 of the dead. An analysis indicated a significant risk for TB related deaths, chronic obstructed pulmonary diseases, cancer of the lungs, Ischaemic heart diseases and other cancers of upper air way and upper gastro-intestinal tract. They concluded that if the factors of smoking were removed 58% of lung cancer, 37% of COPD, 23% of IHD and 20% of TB deaths would have been avoided. Their final note was that smoking was associated with about 8% or more than 20, 000 deaths annually in South Africa and also suggested that although smoking prevalence will increase among the black middle class but that this will be moderate due to government's current initiatives. Death from lung cancer is also said to contribute a significant proportion of all cause morbidity and mortality in South Africa. Ehrlich & Bourne[24] reported that in the 20 years between 1968 and 1988 death from lung cancer amongst coloured men rose by 100% and that of coloured women rose by 300%. These, according to them also correlated with increasing smoking rates among these sub-populations. Furthermore, according Groenewold and colleagues obtained from death notification certificates indicate that in the year 2000, estimated deaths from smoking were 8% to 9% of all deaths and DALY of 3.7% to 4.3%[25].

2.4.3 SMOKING IS DECLINING AMONG AMERICAN ADOLESCENTS

The results of the 2009 Monitoring the Future on smoking[26] indicated that between 1997 and 2009 smoking prevalence among adolescents had declined considerably. Among grade 8 students it has dropped from 21% to 7%, among grade 10 from 30% to 13% and among grade 12 the drop is from 37% to 20%. These drops were rapid in the first 10 years but have slowed in the past two years. However, this success in declining cigarette smoking has been tainted with the rise in the use of smokeless tobacco. The use of smokeless tobacco in the past 30 days was reported as 3.7% among grade 8, 6.5% among grade 10 and 8.4% among grade 12.

2.4.4 SMOKING PREVALENCE AMONG SOUTH AFRICAN LEARNERS STILL ON THE RISE

In 1994 just after the dawn of a new South Africa, Flisher and colleagues[4] conducted a study of the prevalence of substance use among Cape high school learners. The study involved 7340 students from16 schools in the Cape Peninsular. In the part 111 analysis of the study which specifically measured tobacco use, they found that a high proportion of students had used tobacco. They reported that 18.1% of learners were daily smokers. Among those not currently smoking 41.2% had smoked before and 3.6% intended to start smoking. School grade and gender correlated with smoking; smoking prevalence increased with higher school grades and more males than female were smokers. Steyn et al[27] also analysed data from the First Demographic and Health Survey of 1998 for smoking in South Africa. The aim of this study was to examine smoking patterns in South Africa as a step to designing culturally appropriate cessation programmes. 13,826 adults older than 15 years were recruited for the study. The age range was 15 years to 59 years. They reported that by 1998, 24.6% adults were regular smokers. More males (44.2%) smoked then females (11.0%), coloured women had the highest rate of smoking at 39% and African women the least at 5.4%. among regular smokers. They also stated that 24% had made at least one attempt at quitting but only 9.9% succeeded in doing so. They concluded that smoking prevalence was dropping but more still needed to be done. The drawback in this analysis is that they did not separate adolescents from older individual, so the prevalence rate among adolescents was left to speculation. According to the result of the 2002 high school survey[28] the lifetime smoking rate amongst South African students was 30%. Also in the most recent demographic and health survey of 2003[29] it was reported that amongst children aged 15 – 19, 19.9% of males and 10.2% of females had used tobacco. In one study among high school learners in Kwazulu-Natal, Taylor and colleagues[30] examined the prevalence and risk factors for alcohol, smoking and other drug use. 1318 high school learners participated in the study (recruited from 28 high schools). They reported that 13.1% of the students indicated that they smoked more than once daily. The prevalence of substance use among females was much lower than that of their male counterparts with just 2% reporting smoking more than 1 cigarette daily. Age of participants ranged from 14-22 years. Brook and her colleagues[31] also analysed a sample of 1,468 students from 4 ethnic groups in Durban and Cape Town that participated in the in the Global Youth Survey conducted in 1999 and 2002. Forty five percent of participants were boys and Fifty five percent were girls aged between 12 and17. According to their analysis tobacco use by high school learners in South Africa had declined from 46.7% to 37.6% in the period

between 1999 and 2002. Gender was observed to be significantly associated with smoking. Their study suggested that boys were more likely to smoke cigarette than girls. They also observed that ethnic origin could influence the likelihood to smoke. For instance, they reported that prevalence of adolescents smoking was 24.8% among coloureds, 17.6% among whites, 10.7% among blacks and 9.8% among Indians. In addition, age was observed to be a significant risk factor for smoking among adolescents. They reported that older people were more likely than younger adolescents to be smokers. The main pitfall in this study is the fact that they used household survey data and this sample cannot be considered random.

ALCOHOL

2.5.1 GLOBAL BURDEN OF ALCOHOL AND DISEASE

It is estimated that about Two billion people aged 15 years and above have consumed alcohol in the last one year[1]. According to the World Health Organization global status report on alcohol (2004), alcohol remains on top of the substance use and abuse chart[1]. Apart from being responsible for 3.8% of deaths globally, alcohol is said to contribute to 20% of deaths resulting from MVA, 30% of oesophageal cancer deaths and 50% of deaths resulting from hepatic cirrhosis. The same report indicated that the predominant pattern of drinking in most of the developing world is episodic heavy drinking, which is also referred to as binge drinking. Binge drinking is defined as taking 5 cans or more of beer or their equivalent alcohol volume in wine, spirit etc in one session of drinking. According to the world Health Organization report most heavy drinkers in most developing countries drink at levels considered to be hazardous. Hazardous drinking is defined as drinking at levels that places the individual's health at risk for complications associated with alcohol use. Binge drinking is said to be very common among adolescents worldwide. According to Thompson and Walters[32] their study suggested that about 58% of young Americans are episodic heavy drinkers and that majority of them also reported drinking regularly. A similar study by Hartnagel[33] 8 years earlier found that about 27.7% of males and 24.6% of females Canadians had taken 5 cans of beer or their equivalent alcoholic volume of wine or spirit in the past one month. A computer search study by Kuntsche, Rehm and Gmel to examine the European perspective of binge drinking found that binge drinking was common and that it was much higher among adolescents and young adults[34].

2.5.2 ALCOHOL USE AND ATTENDANT PROBLEMS IN SOUTH AFRICA

In the 2002/2003 financial year government revenue from alcohol was R4.2 billion but the estimated economic cost resulting from alcohol abuse was R9.0 billion[35]. Furthermore, in the year 2000, deaths resulting from alcohol use were estimated to be 7.1% of all deaths and also Disability Adjusted Life Years of 7.0%[36]. Of the seventeen most common causes of morbidity and mortality studied by the Alcohol and Drug Units of the Medical Research Council alcohol consumption ranked fourth[36]. However, because alcohol and other drugs use are major contributors to unsafe sex/STD, motor vehicle accidents and inter-personal violence, the actual contribution of alcohol and other drugs use to morbidity and mortality is expected to be much higher. In one study that involved blood alcohol levels among trauma patients in Cape Town, Durban and Port Elizabeth Matzopulos and colleagues[37] reported that 39% of all the patients had blood alcohol level above normal limit. The same report by Matzopulos et al showed that just fewer than 50% of all unnatural deaths between 2002 and 2003 had blood alcohol level ≥0.05 g/100ml and two thirds of all cases tested annually in the three sites between 1999 and 2001 had breath alcohol above normal. I another study that investigated the use of alcohol and sexual behaviour in Gauteng between 2002 and 2003 investigators found a strong link between alcohol use and risky sexual behaviour[38]. Furthermore, another study in Cape Town by Olley et al[39] found that about 20% of HIV patients attending an infectious disease clinic in 2003 met criteria for alcohol use disorder. Lönnroth and colleagues[40] also reported that there was a causal relationship between heavy drinking and weakened immune system, thereby predisposing to tuberculosis and pneumonia. In a country like South Africa with such a heavy burden of HIV and other infectious diseases this should be of serious concern. In addition, mortuary statistics in 2002[41] also showed that in 2002, 45% of all non-natural deaths in Gauteng, Cape Town, Port Elizabeth and Durban had blood alcohol level above normal limits as follows: Durban 37%, Cape Town 53%, Gauteng 40% and Port Elizabeth 61%. In that year the national average was 46%. So, alcohol use constitutes a serious threat to the economic wellbeing of the nation and the health of citizens. There is also strong evidence that alcohol also act synergistically with other factors to increase the incidence of the following diseases: stroke, ischaemic heart diseases, hypertensive disease, diabetes mellitus, liver cancer, cancer of mouth and oropharynx, breast cancer, oesophagus cancer, other neoplasms, liver cirrhosis, epilepsy. Alcohol use also result in alcohol use disorder, falls, drowning, homicide, other intentional injuries, self-inflicted injuries, poisonings and mental disorders such as depression, Wernick's encephalopathy and Korsakoff's psychosis.

2.5.3 ALCOHOL USE DURING PREGNANCY IN SOUTH AFRICA

The issue of alcohol consumption goes far beyond the individual who is using or abusing it. Apart from the adverse effects of alcohol use mentioned previously, alcohol use by pregnant women is fraught with a number of congenital abnormalities. These congenital abnormalities include both physical, mental and psychosocial that poses a great burden to society.

May et al[42] recently conducted a study in the Western Cape on foetal alcohol syndrome. The study was to determine the characteristics of foetal alcohol syndrome in the Western Cape. 992 grade one pupils were assessed for signs of foetal alcohol syndrome; specifically they examined the children using measurements of growth, developmental milestones, dysmorphology and maternal risk. Their findings indicated high prevalence of FAS of 40.5 to 46.4 per 1000 children aged 5 – 9yrs, 18 -141 times higher than in the United States. This result has serious implication for the children, their parents and society.

2.5.4 DECLINING ALCOHOL USE AMONG AMERICAN ADOLESCENTS

The report of the 2009 result of the Monitoring the Future[26] indicated that the use of alcohol has over the past several years declined considerably. The drop in the use of alcohol was reported as 40% among grade 8, by 25% among grade 10 and by 17% among grade 12. However, in the 2009 data, there was no decline in grades 10 and 12. Only grade 8 still showed some marginal decline. Despite this, the prevalence remains high. The 2009 data reported past 30 days use of alcohol at 15% for grade 8, 30% for grade 10 and 44% for grade 12. Of note was the rise in binge drinking among grade 12.

2.5.5 ALCOHOL USE STILL ON THE RISE AMONG SOUTH AFRICAN LEARNERS

Rocha-silva[3] et al reported that there was a dramatic surge in the use of substances, particularly alcohol by adult South Africans. They reported that 42% of their sampled population, who were black youths from both urban and rural communities, had used alcohol at least once in their lifetime, 34% reported they were current drinkers. They also found that more males than females were drinkers and alcohol use increases with age, especially in the age range 18 – 21. According to the result of the 2002 high school survey[28] 49% of learners had drunk alcohol, 23% reported binge drinking. In the most recent demographic and health survey of 2003[29] it was reported that amongst children aged 15 – 19, 31.9% of males and 17.2% of females reported ever drunk alcohol. In one study among high school learners in

Kwazulu-Natal, Taylor and colleagues[30] reported a lifetime alcohol use of 52.9% among male respondents, while among females 25.5% use of alcohol. According to 1998 (DHS) and (SABSSMII) cited by Peltzer and Ramlagan[28] between 1998 and 2005 binge drinking increased from about 29% to 31% in adolescents aged 15 to 24 years. Among adults the prevalence of binge drinking was even higher in terms of standard use of alcohol (which still includes binge drinking). Current use assessed longitudinally from 1993 to 2006 found 21.5% to 62% are using alcohol while the range for binge drinking was reported as 14% to 40%. Research indicates that the scale of the problem is larger than is being acknowledged. In the analysis of part four of their four series study Flisher and his colleague[5] investigated the prevalence of risk taking behaviour and alcohol abuse. This part four report concerned results of alcohol use among Cape Peninsular High Schools. A total of 7,340 students were recruited from 16 high schools. They reported a life time alcohol use of 53.2%, 26.2% had used alcohol in the past month and 15.4% reported episodic binging of alcohol in last 2 weeks. Use of alcohol and the level of use were determined by class grade, ethnic origin and gender. More males than females were using alcohol, alcohol usage increases with increased grade. They identified binge drinking as a particular concern and recommended more research in this area. Parry et al[43] also found that a high proportion of adolescents in South Africa are engaged in heavy drinking. They reported that 50% males and 32% females admitted to ever drinking. In a survey involving 1424 urban high school students Betancourt et al also found a high level of alcohol and other substance abuse[44]. According to their findings 18.6% of the surveyed sample tested AUDIT positive for alcohol abuse. Statistics from the Medical Research Council from 1997 and 2004 indicate that in Cape Town 33% of males and 20% of females in Grade eleven had engaged in binge drinking in the past two weeks (1997) and 80% of adolescents who drink have been drunk at least once (2002) [45]. Another study involving 300 youths drawn from Gauteng and Limpopo Province also revealed high level of substance use. In the study Weir-Smith 2001[46] stated that substance abuse is one of the most important health and social problems in the community. According to him 68% of females in the urban area reported drinking, mainly wine, while 80% of males reported the use of malt beer and 67% reported using spirit and homemade brew. Also 50% of rural youths also reported to be current drinkers._ Parry, Bhana 2002[47] et al also carried out a study on alcohol use. The main objective was to provide community surveillance on alcohol abuse and the consequences of such abuse. Data was gathered over a 4 year period from several sources e.g. arrestees, surveys of high schools, treatment centres, psychiatric facilities, mortuaries. They then analysed these data and reported that alcohol abuse was still a major problem across all

provinces with reports as high as 51.1% in Cape Town and 77% in Mpumalanga of patients seeking treatment who reported alcohol as their primary drug of abuse. They also reported that a great majority of patients admitted to trauma units tested positive for alcohol, ranging from 40.3% for Durban to 91.8% in Port Elizabeth. They stated that mortality victims in mortuary also had high level of positive test for alcohol ranging from 43.1% in Durban to 67.2% in Port Elizabeth. School survey also recorded high levels of alcohol abuse ranging from a high of 53.3% in Durban and 36.5% CT. More male students reported drinking at harmful levels. They recommended proper guidelines for assisting trauma victims with alcohol problems and also assistance for high school learners with alcohol and other drugs problems. In another study involving adolescents aged 14-22 yrs in Kwazulu-Natal Rutenberg and colleagues[48] interviewed these adolescents at home for substance use. They found that among adolescents aged 14-15yrs 7% reported using alcohol in the past 30 days but this increased dramatically to 20% amongst adolescents of 16yrs and over. They also reported that 27% of males reported using alcohol in the past 30 days but this increased dramatically to 40% amongst adolescents of 16yrs and over

2.6 ILLICIT DRUGS

2.6.1 Introduction

Illicit drug use was said to be responsible for an estimated 245,000 deaths in 2004. Worldwide the use of illicit drugs was estimated to be responsible for 0.4% of deaths and 0.9% of DALYS[49].

Lewis[50] stated that the use of mind-altering substance among high school students in the USA is escalating. He also stated that by age of 18 years most adolescents have experimented with one drug or the other to get high. According to him 50% to 80% of adolescents' high school learners use both licit and illicit drugs. Because it is usually difficult to make the difference between use, addiction and dependence, the term use here refers to ever having used drug, even if it was once.

2.6.2 ILLICIT DRUGS USE AND ATTENDANT PROBLEMS IN SOUTH AFRICA

The economic cost and disease burden due to illicit drugs use is less studied all over the world. In South Africa and other developing countries there is a dearth of research in the area of illicit drugs use. This is, in part due to the subterranean nature of their use. However, if the quantity of drugs seized by law enforcement agencies can be used as a gauge for illicit drugs use, then evidence indicates that drug use is a huge problem in South Africa. Records indicate

that between 1999 and 2001 289,943 kilograms of cannabis was seized by law enforcement agencies in South Africa[51]. The Sowetan of November 11, 2003[52] reported that the South African Police Service seized 155 kilograms of cocaine off the East Coast and this was considered the biggest single seizure of cocaine in South Africa's war against the drug trade. SACENDU report of 2000 indicates that over 2 million tablets of mandrax were seized by SAPS in the second half of 2000 alone[53]. Therefore, the problem of alcohol and other drugs use can at best be described as huge. Edmonds and Wilkocks[54] also observed that "South Africa is in the grip of a major drug boom". They cautioned that if serious steps were not taken, and early enough they predicted, the country could lose as much as 30% of its future generation in terms of quality of life, productivity and even life expectancy. Besides, in last 2 years there have been numerous high profile arrests, trials and convictions relating to drug trafficking in South Africa. An article written for the Pretoria News in June 2006[55] indicated that the cost of drug abuse in South Africa was one billion rands annually. However, this figure is surely a gross underestimation. If one considers the cost of law enforcement for the control of drugs, administration of justice, contribution of illicit drugs use to crime and treatment and rehabilitation costs, then the economic cost is staggering. There is growing evidence that illicit drug use contribute significantly to the spread of STIs', including HIV/AIDS. Morojele and colleagues[56] found that when compared to non-users, drug users are more likely to engage in risky sexual behaviours, such as unprotected sex and having multiple sexual partners. Morris & Parry[57], 2006 also reported that methamphetamine which is used mainly by adolescent, majority of them below the age of 20 years heightens libido and its use has been associated with risky sexual behaviour. Studies have also shown that use of illicit drugs leads to increased crime rate. For example, in one study[58] it was reported that the percentage of arrestees who tested positive for drugs, other than alcohol was 49% for rapes, 66% for house breaking and 59% for motor vehicle theft. The use of injectable drugs, currently still low is said to be rising rapidly in South Africa[59] (Parry & Pluddemann, 2002), and therefore, concern is mounting for death through overdose and risk of acquiring and transmitting human immunodeficiency virus and hepatitis C through the sharing of injection equipment.

2.6.3 DAGGA USE AMONG AMERICAN ADOLESCENTS REMAINS HIGH, WHILE USE OF OTHER ILLICIT DRUGS DECLINE

The report of the 2009 Monitoring the Future result[26] in the USA indicate that after about a decade of declining use of dagga by adolescent in grades 9-12, the last 3 years has witnessed

a gradual rise in the use of dagga by adolescents. Not only is the rise in the use of dagga, an additional factor is the fact that many of them belief that there is little risk associated with its use and also many no longer disapprove its use. The proportion of adolescent using any illicit drugs had also witnessed continuous decline, although this has slowed. However, dagga remains the number one drug of abuse. The 2009 annual prevalence for dagga was reported as 12 percent for grade 8, 27% for grade 10 and 33% for grade 12. According to the report, the proportion of students reporting use of any illegal drugs was 15% for grade 8, 29% for grade 10 and 37% for grade 12. The report also indicated that three illicit drugs, LSD, other hallucinogens and methylphenidate declined only amongst the grade 12 in 2009.

2.6.4 ILLICIT DRUGS USE AMONG SOUTH AFRICAN LEARNERS STILL ON THE RISE

Rocha-silva[3] et al reported that 3.8% of their sampled population, who were black youths admitted to be using dagga while 7.4% said they had sniffed glue or petrol. In one study among high school learners in Kwazulu-Natal, Taylor and colleagues[30] examined the prevalence and risk factors for alcohol, smoking and other drug use. They reported a lifetime dagga use of 16.9% for male students. In addition, still among males, 45.5% indicated they had inhaled Benzene, 34.6% thinners, 7.4 had tried cocaine and 4.1 had used crack. The prevalence of substance use among females was much lower than that of their male counterparts with 2.3% reporting ever using dagga. In addition, among the females 18.8 had inhaled Benzene and 10.8% admitted to using thinners. Age of participants ranged from 14-22 years. Another study involving 300 youths drawn from Gauteng and Limpopo Province also revealed high level of substance use. According to Weir-Smith[46], over the counter (OTC) medication was widely used by females (63%) in the rural areas while 53% urban females also reported use of OTC medication. 82% of males in rural and 71% in urban area reported use of dagga. As previously stated, Flisher and his colleague investigated the prevalence of risk taking behaviour and substance use among adolescents in the Cape Peninsular. The part five report concerned results of illicit drug use among Cape Peninsular High Schools[6]. A total of 7,340 learners from 16 high schools participated in the study. Dagga was the most widely used drug and 7.5% reported life time use, 2.4% had smoked dagga in the past week. 10.9% had sniffed solvents, 2.6% in past week. At the time they concluded that most learners who had used drugs were experimental users. In all phases Xhosa women's use of any substance was very low. According to statistics released by UNODC on global drug status for 2008[60], drug use in South Africa is twice the world norm

and that use of cocaine and dagga have increased by 20% in the past 2 years. The same report states that one in six Grade eleven have used cannabis in the past month. The report also noted two new trends – increasing number of adolescents younger than 20 years using illegal drugs and a rising poly-drug use. In addition 60% of high school seniors using dagga reported using other illegal drugs.

2.7.1 RURAL-URBAN SUBSTANCE USE DIFFERENCE: GLOBAL

There are conflicting results about urban-rural substance use difference among high school learners. Many reports indicate that the prevalence of high school substance use and abuse is higher among urban students than their rural students' counterpart. However, there are other studies that show higher levels of substance use among rural students than urban students.

In one study in the USA Cronk and Sarvela[61] compared the prevalence of substance use between rural and urban high school students. This was a longitudinal study from 1976 through 1992. There were 75,916 urban students and 51,182 rural students. Measures that were analyzed included 30 day use of alcohol, drugs, and smoking. They reported that substance use had declined considerably between 1976 and 1992. They also reported that at the beginning of the study in 1976 the prevalence of the use of alcohol, smoking and other drugs was higher amongst urban students when compared to rural students. However, by 1992 the prevalence for most substance was similar between urban students and rural students and that rural students reported higher prevalence and excessive use of alcohol and cigarette than urban students. In addition, they stated that these results were similar for both sexes, except that rural girls showed a later catch-up than their male counterparts. Marijuana use was common amongst both urban and rural students. Urban students had slightly higher prevalence 30% than rural students who had a prevalence of 27%.Other drugs use was not common, both among rural and urban students. For tobacco use, students in rural areas reported both lifetime and higher levels of both cigarette and smokeless tobacco. They also stated that it was common for people to assume that the prevalence of drug use was much higher in the urban areas than in rural areas. According to them trends in recent research reports suggest that there difference in the prevalence rate of substance use between urban and rural students has been decreasing and in some cases the gaps have closed. They concluded that rural students risk for substance use was similar to that of urban students, advising that there needs to be a policy shift so that health education programmes can address this new pattern in the nations rural areas. There is also evidence that there is a complete reversal in the prevalence rate of substance use in some cases. For example, according to the

report of the Monitoring the Future by 2005 by Johnston, O'Marley et al[62] what used to be a large disparity between urban and rural students in terms of substance use has been declining rapidly over the years. In the same vein, according to the latest result of the National Survey on drugs use and Health (SAMHSA, 2005)[63] the prevalence of drug use by youths in rural communities have actually surpass use by youths in urban areas. In one other study in South Korea Joun and colleagues[64] recruited 10,172 adolescents from among 529,606 students, from both junior and senior secondary schools. The final number of students who returned completed usable questionnaires was 9,886(5,009 males and 4,877 females). They found that smoking was more prevalence among urban students than rural students. In another study by Maxwell and colleagues[65] a comparison was made regard to substance use between urban and rural secondary school students in Texas, USA. This was a longitudinal study from 1998 to 2003. Demographically, rural students were more likely to report living with both parents than urban students. Lifetime use of alcohol by both rural and urban students was over 70% but binge drinking was commoner among rural students. In terms of smoking, lifetime use was higher among rural 53% students than urban 51% students. However, the daily smoking rate between urban and rural students was the same. Lifetime and daily use of smokeless tobacco was similar. It is imperative therefore; they asserted that as the differences in substance use between urban and rural adolescents evaporate research should give equal attention to both urban and rural substance use.

2.7.2 RURAL-URBAN SUBSTANCE USE DIFFERENCE IN AFRICA

In one study in Kenya, Kuria[66]compared urban and rural secondary schools for substance use. 952 students responded to the WHO Youth survey questionnaire. Of the 952 students, 547 were from urban schools and 405 from rural schools. Alcohol was found to be the commonest substance of abuse with prevalence of 15% and 14% among urban and rural students respectively. There was no significant difference between urban and rural students with regard to alcohol use. He reported that hard drugs use was more common among rural schools than urban schools. In another study in Zimbabwe Acuda and Eide[67] studied the pattern of substance use among secondary school students in both urban and rural areas. 2, 783 students participated in the study with a mean age of 15.5 years. Alcohol was reported as the commonest drug of abuse, followed by smoking and inhalants, dagga and amphetamines. The prevalence of all drugs use among secondary school students was more common among urban students than rural students.

2.8.1 USE OF ALCOHOL AND OTHER DRUGS AND ACADEMIC PERFORMANCE

2.8.1 INTRODUCTION:

It is well documented that substance use can have long and short term adverse outcome, especially in the young as well as negatively impacting on their school performance. Once started, usually with one substance, many progress to using more than one and in most cases they go on to use more potent ones. This increases the risk for adverse events both for their health and their aspiration for education. Many direct and indirect measures have been used to assess the effect of alcohol and other drug use on the academic performance of high school learners around the globe. Drug use by adolescents is attracting regional and worldwide recognition. This is especially so in certain regions of the world like the sub-Sahara Africa where use of these agents have the undesired consequences of encouraging unsafe sex in a region with such high prevalence of HIV/AIDS, thereby leading to serious consequences.

2.8.2 SUBSTANCE USE AND ACADEMIC PERFORMANCE-THE GLOBAL PERSPECTIVE

The US Centres for Education Statistics reported that 11% of school children aged 16-24 representing 3.4 million were not enrolled in school and were considered drop-out[68]. Kandel and Mensch (1998)[69]analysed data from the National Longitudinal study of Youth Survey to determine if there was any association between drug use and school dropout, and if there is to what extent. In their analysis involving 12,071 high school students aged 19 to 27; apart from the domain of drug use, they also examined the role of other factors such as socio-demographic factors and adult role transitions. They found that after controlling for other factors, including confounders, early drug use by adolescents had an independent influence on school dropout. They found that high school drop-outs were more likely to report involvement in smoking and illegal drug use than those who had graduated. They concluded that there was a causal relationship between early drug use and school dropout. Ellickson and his colleagues[70] also conducted a longitudinal study to examine the relationship between early involvements in substance use and school dropout. 4,390 students from California and Oregon states were recruited into the study. Participants were drawn from grade 7. The first survey took place in 1985 and again in 1990, when they should have completed grade 12. Focus was on how substance use relate to reasons given by adolescents as to why they dropped out of school. Their findings indicated that smoking predicted dropping-out of school. Samples were then analysed by ethnicity and the result was repeated for Caucasians,

African Americans, Asian Americans, but not for Hispanics. However the use of dagga predicted drop-out for Latinos. When they controlled for factors such as demographics, family structure, academic orientation, early deviance behaviour, socio-economic status and school environment, they obtained the same results. In another study utilizing across sectional survey of school drop-out and substance use Aloise-Young, Chavez[71] et al found that school dropout was commoner among high school learners using alcohol and other drugs. Students were asked directly to what extent they thought substance use contributed to their dropping out of school. Sample size 1,812 (53M, 47%F) age 13-21 drawn from communities in mid - western USA. Of 1,812, 990 school going students served as control, and 822 were school dropouts. Participants who responded that they were still in school to the question "are you still a student in school?" were excluded from analysis. Participants received $10 (in school) $20 (dropout) for their participation. Students't-Test analysis of the two groups did not find any different between the two in their rating of substance use as the primary reason for dropping out of school. The overall result showed that 32.7% of Mexican American drop-outs and 30.1% of Non-Hispanic whites dropped out of school specifically due to their involvement in the use of alcohol and other drugs. The main pitfall in this study is the incentive provided in form of money. This kind of incentive is capable of attracting adolescents who may just come to provide wrong information while their primary reason for participating is just for the money. Another study by Cox and his colleagues[72] used the 2003 Mississippi youth risk behaviour survey. Data analysis was based on response to the question during the past 12 months how would you describe your grades in school (options) High, or better than average) mainly AS, mainly BS, mainly CS, mostly DS, Mostly FS, none of these grades or not sure. The researchers then classified mainly As or Bs as high grades, mainly Cs or below as low grades. The main thrust of the investigation, was prevalence of academic performance by gender, race and grade level versus behaviour categories – frequent smoking, binge drinking and marijuana use. Non-Hispanic black were less inclined to respond to the academic performance question and thus much more likely to be excluded from analysis. Results: Students, who smoked frequently, reported drinking heavily and dagga users reported higher levels of poor academic performance, even after all other factors were held constant. The finding on binge drinking alone was not statistically significant and their explanation was that this may have resulted from different definitions for alcohol use which did not state how frequently the binge drinking occurred.

Arellano CM, Chavez EL, Deffenbache et al[73] studied Mexican-American and white Hispanic school dropout. 1,805 students participated in the study, both dropout and in school

students. They reported that students who dropped out of school were 2.53 times more likely to report using alcohol frequently than their in school counterparts. In addition dropouts were 3.16 times more likely to report heavy drinking and three times more likely to report frequent drunkenness when compared with their in-school counterparts. Another study by Jeynes[74] used the NELS (National Longitudinal Education Study) data set to assess the relationship between teen pattern of alcohol, dagga, cocaine and cigarette use and academic performance. Findings: Alcohol use, smoking and drugs use all have impact on school performance. Alcohol and smoking had more effect. In another study, Bray et al[75] examined the role of other factors other than alcohol that may impact on school drop-out. This was a longitudinal study involving 1392 adolescents in the age range 16 – 18 yrs. They reported that initiation of marijuana use was significant for school drop-out with an OR of 2.3 times that of non-user of dagga. They also stated that high school students who engage in the use of marijuana were less compliant with homework, score lower grades and are generally more delinquent. According to them, the risk of high school dropout is much higher in students who use alcohol and other drugs than in peers who do not use them. They reported that high school students who abuse alcohol are five times more likely to drop out of school than those who do not and may remember 10% less than those who do not drink.

The US National Survey on Drug use and Health[63] found that drug and alcohol use correlate well with poor academic performance. In their survey between 2002 and 2004 they found that students who engaged in binge drinking in the past one month had the worst school performance. According to the report amongst students who did not engage in the use of alcohol in the month preceding the interview 72.5% reported an A or B score in their last semester results, those who reported use of alcohol but did not engage in binge drinking 67.1 reported score of A or B and 57.7 of those who engaged in binge drinking reported score of A or B. In the same report 72.2 of students who did not engage in the use of marijuana reported scores of A or B, 58.0% of those who use marijuana 1-4 times monthly reported score of A or B and for those who reported using it more than five times a month only 44.9% reported scores of A or B. In addition, they stated that abuse of alcohol and other drugs may interfere with the capacity to think and also reduce attention span and non-drinkers and non-drugs users demonstrated superior test scores in reading and mathematics than their drinking and drugs using peer. In another study[76], Brown and her colleagues compared two groups of adolescents; 33 alcohol dependents who have had over 100 life time alcohol episodes but who were not dependent on any other substance of abuse and 24 adolescents without any history of any kind of dependence. They were matched for age 15 – 16 yrs, age, family

history of alcoholic abuse and dependence, education and socio-economic status. Neuropsychological test and psychosocial measures were administered to the alcoholic dependents group after 3 weeks of rehabilitation and detoxification. The result shows a great difference in performance in multiple areas between the two groups. They reported that there was significant deficit in the retrieval of verbal and non-verbal information in the chronic alcoholics.

In another study involving high school students aged 11- 16 years Sutherland and Shepherd[77] examined the relationship between substance use and academic achievement and expectation. 4,516 students from 5 schools with a total enrolment of 5679 were recruited for the study. However, on the day of administration of the questionnaire only 4625 students were present and 4535 usable questionnaires were returned in sealed envelopes. In terms of academic achievement and expectation, low achievers were twice as likely to smoke, more than 2.5 more likely to be using drugs and 1.3 times more likely report alcohol use. Also substance users were less likely to proceed to university. The pitfall in this study is the fact that the questionnaires were administered by their teachers. In addition, the absenteeism of 18.5% is too high as this section of students may weigh heavily toward substance users.

McMiller and Plant[78] analysed data from the UK arm of the 1995 European School Project on Alcohol and other Drugs. The main thrust of the analysis was to find out if there were other factors that influenced truancy behaviours and poor academic performance relating to drug, smoking and alcohol use by adolescents high school learners. Analysis was carried out with Pc carp package, which allows for clustering of subjects within schools in addition to the features of standard statistical packages. Perceived academic performance was categorized as below average and the rest. Lifetime alcohol intoxication was significant only for perceived academic performance. Lack of hobbies, parental low education, cannabis use, other drug use, family structure, smoking all predicted perceived poor academic performance. However, they cautioned that only 6409 of 7722 of total survey were analysed because the personality / symptoms measure came at end of the questionnaire. For this reason, they contend that not all slower learners were able to complete the questionnaire within the time available and were thus excluded in the analysis. This obvious setback means the available data was biased towards faster students. In the sections where data was available for all 7722, those who failed to complete differed significantly from those who did complete and most that did not complete it were from single parents. Use of cannabis only predicted absence from school but not perceived poor academic results. Smoking highly predicted poor academic results. Once

other variables were controlled, alcohol intoxication failed to predict poor academic performance or absence from school.

In one study in Nigeria, the relationship between substance use (alcohol, dagga, mild stimulants and hypnotics) and academic performance was examined[79]. The study found that students who were using or abusing substances rated their academic performance as poor when compared with those not engaged in substance use. In another similar study, also in Nigeria, Abiodun and his colleagues[80]stated that dagga smoking correlated with self-rated poor academic achievement. Shehu and Idris[81] reported a similar finding but were of the opinion that this may be largely due to poor school attendance, rather than intellectual capacity. This is borne out of the fact those students who had quit smoking dagga reported that their academic performance had improved considerably since quitting. However, this finding actually supports the fact that substance use lead to poor academic performance.

2.8.3 SUBSTANCE USE AND ACADEMIC PERFORMANCE IN SOUTH AFRICA

In South Africa as is the case with most developing nations poor academic performance by students have always been blamed on factors within the school and not much attention has been given to factors outside the school system. It is always that teachers are not doing their work properly, poor infrastructure or inadequate facilities at schools. However, of late there has been an outcry from all quarters about the abuse of drugs by high school leaners. Regrettably, however, the emphasis has been on the relationship between students' use of alcohol and other drugs and their relationship with crime, rapes, violence, drunken driving and motor vehicle accidents. This may be because these issues have immediate impact on the community and the nation at large. Other data on adolescents/students alcohol and other drugs use have come from treatment centres across the country. Very few researches have touched on the subject of alcohol and other drug use and academic performance, and these have touched the subject just on the periphery. Flisher and his colleagues found that smoking and or drinking in the previous month was significantly associated with repeating a class[82]. No research to date has specifically been undertaken to examine the impact of the abuse of alcohol and other drugs by students on their academic achievement. A recent article by Reddy and colleagues using South African data from the 2002 South African National Youth Risk Behaviour Survey[83] found that poor academic performance correlated with rates of past month use of alcohol. Reddy and her colleagues undertook this study to compare alcohol, drug and tobacco use between South African and the USA. Their main objectives were to compare the use of illicit drugs, alcohol and cigarette and certain socio-demographic factors

that research in the USA has shown to correlate with substance use in the USA. These factors included among others age, gender, grade, ethnicity and academic performance. In South Africa, country wide 2002 National Youth Risk behaviour survey consisting of 10699 students of grades 8 – 11 was used. School response rate was 91% and students' response rate was 66%. In the USA there were 15240 participating students in grade 9 to 12 drawn from the 2003 US Youth Risk Behaviour Survey which have been undertaken biennially since 1991. However, during data analysis only grades 9 to 12 were included. The US data included students from both public and private schools, while the South African data did not include students in private schools. In all 19027 questionnaires were administered, consisting of 52% females. The academic achievement measure was assessed as (a) mostly As, (b) mostly Bs to Ds and (c) lower than mostly Ds. They reported that binge drinking; smoking dagga and cigarette smoking were much higher among students with poor academic achievement than those with outstanding performance in both South Africa and USA. The substance use effect on academic performance was more pronounced in the US than in South Africa. The result was mixed however, because high achievers were also found to be more involved in the use of hard drugs than those with poorer academic achievement. In one recent study by Flisher and his colleagues a very high rate of school dropout was noted[84]. 1470 questionnaires were administered to grade 8 students. Dropout rate in 4 years was reported as 54.9%. After adjusting for confounders, dropout was to a large extent predicted by poverty, absenteeism and past month smoking but not by past month alcohol use or life time illicit drug use. They concluded that it is possible predictors of dropout in developed world may be different from predictors in developing countries.

2.9.1 ADOLESCENT RISK FACTORS FOR ALCOHOL AND OTHER DRUGS USE

Several risk factors have been identified and also suggested to be contributory to adolescents' use of alcohol and other substances of abuse. In one longitudinal study involving 1, 380 adolescents aged 12, 15, and 18 interviewed telephonically on two occasions 3 years apart Johnson and Pandina[85] reported that at the end of 3 years, drinking by younger children was influenced by attitudes towards and use of alcoholic beverages by parents of the same sex but in the older children, fathers' use of alcohol predicted continuous alcohol use by adolescents. Other factors that were positively predictive of alcohol use by adolescents were lack of warmth and hostility towards children. They reported that only 1,308 subjects (95%) of original number of adolescents participated in the 2nd telephonic interview. Family harmony and cohesion, parenting styles and the attitude and behaviour of parents were also important

factors in determining substance use by adolescents. In a national household survey of adolescents, Kilpatrick et al[84] 2000 reported that adolescents who had experienced physical, sexual abuse or exposed to an environment riddled with violence were far more likely to abuse drugs and alcohol than those with no similar experiences. They analysed data from the National Household Probability in children aged 12 – 17 yrs. A total of 4, 023 adolescents were interviewed telephonically and the questionnaire covered the topics of substance use, substance use by family members, victimization experiences and post traumatic reactions. The purpose of the study was to examine substance use, victimization experiences, and family substance use and post traumatic reaction to identify risk factors for substance abuse or dependence. They reported that having a family member who was using or abusing substances also positively predicted drugs and alcohol use in adolescents. According to them the pain provoked by assault drive people to adopt behaviours that reduce negative feelings, thereby attenuating the pain. Post-traumatic stress disorder had an independent risk for dagga and hard drugs use. These effects were more pronounced in Caucasians, Hispanics and Native Americans than with African-Americans whose risk was just a third of the total calculated risk for the other groups. Also, in one cohort study by Kandel[87] and colleagues involving high school students in New York City, he reported some interesting findings. The aim of the study was to identify stages of adolescent substance use and the risk factors for initiation and continuous use of alcohol, cigarette and other drugs. There were two waves of sample collection. He reported that association with drug using peers, depression feelings, and poor relationship with parents and personal belief and values were the strongest predictors for initiation of substance use. Jackson 2002[88]also conducted a cross sectional study regarding parenting. He compared four types of parenting styles – cohesive authoritative style, authoritarian style, permissive style and indifferent style. He reported that adolescents who were raised in authoritarian or very permissive parenting styles were more likely to deny_parental authority, and therefore more prone to the use of alcohol and other drugs. Windle also conducted a study involving adolescents in 1994. Data were drawn from NASHS – National Adolescent students Health Survey[89]. There were 224 schools involved in the study; 190 public, 34 private from 20 states in grades 8 and 10. 89% grade 8 (eligible) and 86% grade 10 participated in the study. A total of 11,400 students aged 11-17 were recruited. The main aim was to assess if victimization and risky behaviours correlated with substance use. Risky behaviours assessed included blind date, hitch-hiking etc. Findings indicated that risk taking behaviour correlated with substance use. Fischer and Wampler[90] also did a study of dysfunctional families. This study involved 674 young adolescents who came from

dysfunctional families. The purpose was to examine how children raised in such dysfunctional homes are affected differently by the same dysfunctional environment. Their findings suggested that differential roles in the home may act as protective or vulnerable factors in the adolescent's risk to abuse of alcohol and other drugs. They concluded that children are differentially and predictably influenced by a dysfunctional family of origin. Mansell and Liu[91] mentioned earlier reported that parents of many substance abusing children are overwhelmed with life challenges. Challenges faced by parents of most addicts include poverty, substance abuse, poor social situation (i.e. lack of support). They also stated that children who are exposed to drugs during pregnancy are particularly prone to drug use because of being exposed to an environment riddled with drugs. They suggested that many of these exposed children in utero are usually exposed to multiple agents. Brook et al identified two main domains of risk factors for adolescent alcohol and substance abuse[92]. According to them, personal attributes like depressive mood, delinquency, rebelliousness and tolerance of deviance and peer influence are more predictive of adolescents' alcohol and other drugs abuse than factors such as environmental stressors and parental factors. Researchers have also suggested that alcohol and other substance use by adolescent is a coping strategy for dealing with interpersonal aggression. Bean and his colleagues[93] suggested that violence plays a significant role with regard to substance abuse by adolescents. They also suggested that substance use may represent a strategy for adolescents to cope with the stress that comes with inter-personal violence. Banes and his colleagues (1995)[94] also reported that adolescents who come from strong religious homes were far less likely to indulge in the use and abuse of alcohol than those from weak religious backgrounds. Pillay and Wassemaar[95] who reported that among the Indian population in South Africa, substance use by adolescents was much higher in adolescents from families with high conflict and turmoil. Ramlagan and colleagues[96] recently examined the epidemiology of drug abuse treatment in South Africa. They analysed data obtained from the South African National Council on_Alcoholism and Drug Dependence and SACENDU. They also interviewed provincial coordinators and managers in each of the nine Provinces. In addition, forty six patients from 2 centres in the Free State and North West Provinces also responded to self-administered questionnaire. The result also indicated that substance abuse was more common in males of lower education, white and black and less common among coloured, females and Indians. Age of onset of non-drug substance abuse e.g. glue was 9 yrs, alcohol 10-12 yrs, dagga 11-12, tobacco 14yrs and harder drugs at 17yrs. Abusers said that they got involved for various reasons ranging from

unemployment, long shift work, association with substance abusers, poverty, and lack of recreational activities.

Parents lack the knowledge to detect the signs and symptoms of drug abuse in their children and children themselves do not have the will power to refuse to join those who recruit them into the business of drug use. Parents may also indirectly contribute to the behaviour of their children because many parents do the things they do not expect their children to do in front of their children e.g. drunkenness, frequent arguments, fights and quarrels.

2.10.1 IMPLICATION OF ADOLESCENTS' SUBSTANCE FOR SOUTH AFRICA

The use of alcohol and other drugs and its attendant problems, especially amongst vulnerable groups, such as adolescents, is a growing problem all over the world. Although there is limited data on substance use in Africa, the little data available indicates that this is also a huge problem in the continent and that it is escalating. In South Africa, like in many other developing countries substance use is increasing. While there may be some regional variations in terms of prevalence and predominant agent, on the whole a wide range of substances are being used (Parry et al., 2002). Although alcohol, cigarette and dagga remain the major drugs used, some substances have overtaken these traditional leaders in some regions. For example, according to a WHO report of 2002[97], methamphetamine has become the primary agent for treatment demand in the Western Cape in recent years (World Health Organisation, 2002).

Recent research findings suggest that in many developed countries abuse of alcohol and other substances of abuse by adolescents is stabilizing and in some, even dropping. Turner (2000) predicted that although stabilization was expected for many substances in the USA a dramatic drop was unlikely before the year 2010[98]. However, according to the 2006 monitoring the Future Survey by the National Institute for Drug and Alcohol Abuse[99] since 1997 past year prevalence has fallen by 25% among 10 Graders and by 14% among 12 Graders. Combining all three high school grades past month abuse of any illicit drugs had dropped by 23% since 2001. All these finding sharply contrast with what is happening in South Africa today. Several studies indicate that the use and abuse of alcohol and other drugs among high school remain high and is still rising[45].

CHAPTER THREE

METHOD

3.1 STUDY DESIGN:

The study design is cross sectional and analytical.

3.2 STUDY SITE

The Mogalakwena Municipality is situated in the Western part of Limpopo Province. It is one of the five Sub-districts that make up the Waterberg District of Limpopo Province. Lephalale bound it on the western side; on the north it is bound by Blouberg Sub-district, to the east by Aganang Sub-district, and on the South by Mokgophong. The total population of the Sub-district was 324467 in 2001, representing about 6% of the population of Limpopo Province. 46, 6% of the population of the Sub-district is made up of people aged 0 to 19years. There are a total of 117 high schools in the Sub-district with a student population of 44249.

3.3 STUDY POPULATION:

There are 117 high schools with a population 44249 within the Mogalakwena Municipality. Majority of the schools are located in the rural areas (within and around settlements designated as large village or smaller). All high schools within the Municipality were considered for inclusion. The student population in the rural areas is homogenous in terms of race; and although the student population in Mokopane town is largely homogenous, a few schools here are of mixed race. The students recruited for participation were those in grades 10, 11 and 12 who are aged 15 to 23 years. The choice of the age range is because they are more likely to have a little understanding of the meaning of the word research and can also assent to participation since there is very little or no risk involved. In addition, this age group would more likely understand the questions contained in the questionnaire and, therefore, able to provide appropriate responses.

3.4 SAMPLING METHOD:

This involved stratified cluster sampling. Research indicate that on the average 50% of students have experimented with cigarette, drinking or drugs[100, 4], and estimating 95% confidence level with 5% variability the sample size in each unit is estimated to be 60.The Sub-district is made up of nine education circuits. One school was selected from each circuit

and; in each school one class in grade 10, 11 or 12 was chosen by random sampling. It was estimated that each school had a population of about 500. In the first stage of the sampling the names of all schools in each education circuits were written on a piece of paper and rolled into a pulp. These were thoroughly mixed, and then one was picked. The selected schools were then put in two containers of urban and rural, mixed again and then picked once at a time for grades 10, 11 and 12. Each pick was followed by mixing. When the same grade is picked again, the process was repeated until the right grade was picked. The age of inclusion is 15 to 23 years. The modalities for the data collection were discussed with the school authorities and the school authorities were asked to assist to arrange it in such a way that there was no interruption with normal academic activities. All students who gave assent in the chosen classes and who met the age criterion were eligible for inclusion in the study. Students who did not want to participate were asked to leave the class during the period of data collection. Although the acceptance rate for this kind of study is high, it is also well documented that students who abuse alcohol and other substances have high dropout rate and absenteeism, so many of such students may be missed[101].

Table 3.1: Details of participating schools (n= 679)

Name of school	Total no of eligible students	Grade	No of students	%
Rural schools				
Raleledu snr secondary school	378	11	58	8.54
Malebo senior secondary school	543	12	65	9.57
Nakonkwetlou secondary school	467	10	66	9.72
Bakenberg high school	574	12	73	10.75
Seritarita high school	511	11	68	10.01
Urban schools				
Madikana secondary school	553	10	82	12.08
Waterberg high school	626	10	96	14.14
Nkakabidi snr secondary school	506	11	89	13.11
Ebenezer high school	535	12	82	12.08
Total			679	100

Table 3.2: Number of students in each grade from urban and rural schools

	Rural	Urban	Total
Grade 10	66	178	244
Grade 11	126	89	215
Grade 12	138	83	221
Total			

3.5 MEASURING TOOL:

The measuring tools used included the substance Use Scale and the academic achievement variable. The substance use scale questionnaire[102] designed by the World Health Organization has been repeatedly validated and has become standard in research involving alcohol and other drugs use. The substance use scale questionnaire was originally a 123-item instrument containing questions on prevalence and frequency of alcohol and other drugs use, basic demographic profile and lifetime, current and past use. The Risk Factor subscale has also been widely used and validated[103]. The academic achievement score variable has been used recently to examine the impact of alcohol and other drugs use on the academic performance of adolescents[104]. The questionnaire used here is a highly abridged form of the ones mentioned above. This has been done to suit the scope and purpose of the current research but the essential elements are retained. Questions were focused on participants' demographics, smoking, alcohol and illicit drugs use and self-reported impact on academic performance.

3.6 DATA COLLECTION

The process of data collection involved completion of a questionnaire by research participants. Students self reported grades are said to be reliable and sufficiently adequate for research[105]. The questionnaire was written in English. English is the language of instruction in all the schools. The principals were asked to allocate to me periods that may not interfere with the normal academic activities of the schools. To make students more comfortable teachers were not allowed to be present during the whole process of administration and completion of questionnaire. Before the administration of questionnaire the purpose of the study was explained and students were encouraged to ask questions and express any concerns if any. Confidentiality and anonymity were explained and students who were not comfortable in taking part were excused with assurances that no action will be taken against them for not participating. For those willing to participate, assent was obtained from them. The instructions about how to complete the questionnaire were then read to them and any further clarity provided. The completed questionnaires were collected as soon as they were completed. A contact form with the researcher's name and contact was given to both participants and those who refused to participate. They were asked to contact the researcher in case any further questions or assistance arose later.

3.7 DATA ANALYSIS

All the items in the questionnaire were individually coded e.g. 1 stood for male and 2 for female; 1 for grade 10, 2 for grade 11 and 3 for grade 12. Generally, in each of the questions, answer option (a) was coded as 1, option (b) coded as 2, option (c) coded as 3 etc. They were then batched according to the class grade and then split into urban versus rural groupings. The information from the questionnaire was then entered into Epi Info version 6.4 for analysis. Descriptive statistics and frequency distribution were obtained. In questions requiring categorical answers like yes or no Chi Square and cross tabulations yielding p values were used to compare categorical data across alcohol and other drug abuse groups. Data analysis aim to highlight the major differences between urban and rural students' alcohol and other drug use and perception of use on their academic performance. Also highlighted is difference in level of use (of alcohol/drugs) between the various grades.

3.8 PILOT STUDY

A pilot study was carried out in one of the high schools in one of the locations in Mokopane. The recommended number for pilot study is usually between 10% and 30% depending on sample size. 60 students were recruited from one of the locations around Mokopane town for the pilot study. The purpose of the pilot study was to find out if students of similar grades as the proposed study population could understand and answer the questions accurately. It was also intended to provide approximate time for completion of the questionnaire. The students recruited for the pilot study were not included in the main study.

3.9 SOURCES OF BIAS

While any findings in the study may be important it may not have general application because the sample was drawn from a single district. The research is a cross sectional one and therefore excluded people who did not attend school on those days that the questionnaires were administered. In addition, those learners who had dropped out of school were also excluded. This may lead to underestimate of learners involved in the use of alcohol and other drugs because research indicates that the prevalence of alcohol and other drug use is higher among absentee and drop out students[105]. Also since it involved self-reported questionnaire it may not be realistic to conclude that every learner provided honest information despite assurance of anonymity. There is also the possibility of recall bias. Questions about what happened a month ago or a year ago may not have attracted accurate answers due to

forgetfulness, especially in those who drank heavily. Studies have also shown that people who drink remember less[115].

3.10 ETHICS:

An application was made to the Human Research Ethics Committee and the Postgraduate Committee of the University of the Witwatersrand for approval and approval was obtained before the start of this study. Clearance already obtained: protocol number M081011. Also see appendix 1 below. Written consent was obtained from the Provincial Education Headquarters to carry out the study. Written consent was also obtained from the authorities of the participating schools. Assent were also obtained from the participating students with assurance that no one will be victimized if they chose not to participate. The South African research protocol accepts that the departments of education and school governing bodies, being the guardians of students can act on behalf of parents in giving consent if the research poses minimal risk to the students. The study was completely anonymous, no names or address were obtained.

CHAPTER FOUR

RESULTS

4.1 Response rate: The overall response rate for all learners was 99.85% but usable questionnaire constituted 81.78%. The table below shows the individual school response.

Table 4.1: Response rate (no= 679)

Name of school	Grade	No of students	Incomplete ++	%	Absent	%	Usable	%
Rural schools								
Raleledu secondary sch	11	58	7	12.1	6	9.4	51	87.9
Malebo snr sec school	12	65	13	20	1	1.5	52	80
Nakonkwetlou sec sch	10	66	14	21.2	4	5.7	52	78.8
Bakenberg high school	12	73	17	23.3	5	6.4	56	76.7
Seritarita high school	11	68	10	14.7	5	6.8	58	85.3
Urban schools								
Madikana sec school	10	82	17	20.7	7	7.9	65	79.3
Waterberg high school	10	96	13	13.5	4	4.0	83	86.5
Nkakabidi snr sec sch	11	89	18	20.2	8	8.2	71	79.8
Ebenezer sec school	12	82	15	18.3	5	5.7	67	81.7
Total		679	124	18.3	45	6.2	555	

++ Very scanty information e.g. no age, sex, grade and responding to only one or two items

The table above shows the total number of questionnaires administered by school, number of returned completed questionnaires, number and percentages of incomplete questionnaires and number and percentages of absenteeism, school by school. Students' participation rate was almost 100% since only one student refused to participate. One school was replaced because of the difficulty in getting to the school. It was replaced by the nearest school to it, from the same education circuit. Of the six hundred and seventy nine questionnaires administered, there were 555 or 81.7% usable questionnaires returned. One hundred and twenty four (124) representing 18.3% did not provide enough information for analysis and so these were not included for data analysis. In addition, 45 learners, representing about 7.56% of the target population were absent from school on the day of data gathering.

4.2: Response by School region

Table 4.2: Respondents by school region (no=555)

School region	Frequency	%
Rural	269	48.47
Urban	286	51.53

As can be seen from the table there was a slightly higher percentage (51.53%) of respondents from schools in urban areas than those from rural schools (48.47%). This is due to the fact that urban schools have more learners per class.

4.3.0 DEMOGRAPHIC CHARACTERISTICS OF STUDENTS:

4.3.1 Age: The age range and number in each age range is given in the table below.

Table 4.3.1: Participants by age group (no=555)

Age range	Freq	%
15/16	134	24.14
17/18	268	48.29
19/20	124	22.34
>20	29	5.23

As can be seen from table above majority of the learners (48%) were in the age group 17-18 years, 24% were below 16, 22% were in the age range 19-20 and 5% were above 20. The mean age of the learners is 17.7±1.55 years, range 15 to 23 years.

4.3.2 Participants by gender

Gender: 4.3.2

	Number	percentage
Males	260	47
Females	295	53

Of the 555 learners who returned usable questionnaires, 295 representing 53% were females and 260, representing 47% were males.

4.3.3 Participants by school grade: Number of respondents by school grade.

Table 4.3.3: Learners by school grade (no=555)

Grade	Freq	%
10	188	34
11	185	33
12	182	33

Table 4.2.3 above shows the distribution of respondents by class grade. There was an even distribution in terms of class grade. 34% were in grade 10, 33% in grade 11 and 33% in grade 12.

4.3.4 Family member living with: The responses to the question about who they were living with, is shown in the table below.

Table 4.3.4: Family member lived with (no=555)

	Freq	%
Both parents	242	43.60
Mother	155	27.93
Father	18	3.24
Grand parents	79	14.23
Relatives	40	7.21
Others	21	3.78
Total	555	100

As can be seen from the table above, majority of the learners were living with their parents (43.60%) although another 27.93% lived with their mother.

4.3.5 Household size: The responses to the question about number in household, is shown in the table below.

Table 4.3.5: Number of people in household (no=555)

no	Frequency	%
2	14	2.52
3	61	10.99
4	88	15.86
5	141	25.40
6 or more	251	45.22
Total	555	100

As indicated in the above, table above majority of learners live in households having six or more people (45.22) while another 25.40% live in households with five people.

4.3.6 Source of family income: The responses to the question about main source money for the family, is shown in the table below.

Table 4.3.6: Main source of money for the family (no=555)

	frequency	%
Both parents working	126	22.70
Working dad	116	20.90
Working mom	138	24.86
Working siblings	18	3.24
From relatives	36	6.49
Social grant	118	21.26
Other	3	0.54
Total	555	100

The table above indicates that mothers are the commonest source of income for the households (24.86) although both parents working (22.70) and dads (20.90) are also common. Of note is the role of social grant which provides income for 21.26% of families.

4.4.0 SMOKING AND DEMOGRAPHIC INFORMATION

4.4.1 Current smokers: The responses to the question about smoking during past month are shown in the table below.

Table 4.4.1: Current smokers

	Frequency	% among learners	% among lifetime smokers
Current	113	20	72.4

As can be seen from the table above, 72.4% of people who have ever smoked did so in the past one month.

4.4.2: Lifetime, past month (current) and past week smoking: Responders were asked about whether they smoked during the past one month and also during the past one week. The responses to the question about smoking during the past month and past week are shown in the table below.

Table 4.4.2: Lifetime, past month and past week tobacco use (no=156)

	Frequency	% among learners	% among smokers
Lifetime	156	28	
Past month	113	20	72.4
Past week	76	13.69	48.7

As can be seen from the table, 72.4% of learners who have ever smoked also did so in the past one month. Also, 48.7% of them smoked during the past one week preceding the survey. However, the past month and past week cigarette smoking based on the total sampled population are 20% and 13.69% respectively.

4.4.3: Lifetime smoking by gender

Table 4.4.3: Lifetime smoking by gender (no=156)

	Yes		No		p-value
	Freq	%	Freq	%	
Males	106	68	154	39	0.0001
Females	50	32	245	61	

The table indicate that of the 260 male learners who responded to this question correctly, 106 of them said they had smoked at least once in their lifetime and 154 reported they have never smoked. Also, of 295 female learners, 50 reported ever smoking and 245 indicated they have never smoked. So, more males (68%) than females (32%) have ever smoked. This finding indicates a statistical significance between male and female learners (<0.001).

4.4.4: Lifetime smoking according school grade

Table 4.4.4 : Lifetime smoking by class grade (no=156)

	Yes		No		P-value
Grade	Freq	%	Freq	%	
10	72	46	116	29	
11	33	21	152	38	
12	51	33	131	33	
Total	156	100	399	100	0.0001

As shown in table 4.4.2 majority of learners who reported ever smoking were in grade 10 (46%), 21% in grade 11 and 33% in grade 12. This finding indicates a statistical significance difference between the grades in terms of smoking (p<0.0001).

4.4.5: Lifetime smoking by age grouping:

4.4.5 Lifetime smoking and age

	Smokers	Non-smokers	P-value
Students t-test of age	17.5 ± 1.51	17.8± 1.55	0.0440

As the above table indicates, using the student t-test to analyse results for life time smoking showed that smokers were younger than the non-smokers.

4.4.6: Provision of free cigarettes: The responses to the question about if they would smoke everyday if free cigarettes were to be provided, are shown in the table below.

Table 4.4.6: Effect of provision of free cigarettes (no=156)

	Freq	%
No	125	80.13
Yes	24	15.38
Don't know	7	4.52
Total	156	100

As can be seen in the table above indicates of 156 learners who indicated they ever tried cigarette, the vast majority of 80.13% indicated they would not smoke daily even if free cigarettes were provided.

4.4.7: Smoking at school: The responses to this question are shown in the table below.

Table 4.4.7 : Smoking at school (no=156)

	Freq	%
Never	120	76.92
Only once	8	5.13
Occasionally	12	7.69
Many time	10	6.41
Everyday	6	3.85
Total	156	100

As can be seen from the table a great majority (76.92%) have never smoked at school and only 3.85% did so daily.

4.5 ALCOHOL DRINKING AND DEMOGRAPHIC INFORMATION:

4.5.1 Responses to the question about drinking in the past one month are shown below.

Table 4.5.1: Alcohol use in past one month (current drinkers)

	Frequency	% among drinkers	% among all learners
Current	332	91.9	59.98

As can be seen from the table a high of 91.9of learners who had ever drunk alcohol did so in the past one month.

4.5.2: Lifetime, past month and past week and bingeing: Responses to the question ever drunk alcohol containing beverages, and if so, if they drank in the past one month and during the past week and also if they ever had five or more drinks in one sitting is given below.

Table 4.5.2: Lifetime, past month, past week and binge drinking (no=361)

	Frequency	% among drinkers	% among all learners
Lifetime	361		65
Past month	332	91.9	59.98
Past week	234	64.8	42.16
Bingeing	244	67.6	43.96

As can be seen from table above, 91.9% of those who have ever drunk alcohol also did so in the past one month, 64.8% of them used alcohol during the past one week preceding the survey and 67.6% of those who have used alcohol have also binged alcohol. However, actual percentages based on the sample population for past month and past week alcohol use are 59.98 and 42.16 respectively and bingeing of 43.96%.

4.5.3: Lifetime alcohol use by gender: The responses to the question of ever tried alcohol are shown in the table below.

Table 4.5.3: Lifetime alcohol use by gender (no=361)

	Yes		No		p-value
	Freq	%	Freq	%	
Males	195	54	65	34	0.0001
Females	166	46	129	66	
	361	100	194	100	

As can be seen from the table above 54% of learners who have ever used alcohol are males while 46% are females. This finding indicates a statistically significance result between male and female learners (<0.0001).

4.5.4: Alcohol use by age:

Table 4.5.4: Lifetime alcohol use and age

	Alcohol users	Non-alcohol users	P-value
Students t-test of age	17.6 ± 1.50	17.7± 1.54	0.4472

As can be seen from the table above there was no significant difference in alcohol use between the different ages.

4.5.5: Alcohol use by school grade: The responses to the question of ever tried alcohol by class grade are shown in the table below.

Table 4.5.5: Lifetime alcohol use by class grade (no=361)

	Yes		No		p-value
Grade	Freq	%	Freq	%	
10	132	37	56	29	
11	102	28	83	43	0.002
12	127	35	55	28	
Total	361	100	194	100	

As can be seen from the table above 37% of grade 10 learners have ever used alcohol, 28% of grade 11 learners have tried alcohol while 35% of grade 12 learners have done so. The table also indicates that alcohol use is commoner among great 10 learners. This finding indicates a statistically significance result between the grades in terms of alcohol use (<0.002).

4.5.6: Provision of free booze: The responses to the question of daily drinking if alcohol was available for free are shown in table below.

Table 4.5.6: Effect of providing free alcohol (no=361)

	Freq	%
No	278	77.0
Yes	56	15.51
Don’t know	27	7.48
Total	361	100

The table above indicates that of 361 learners who indicated they ever drank alcohol, the vast majority of 77.0% indicated they would not drink daily even if free alcohol was provided.

However, a high percentage of 15.51% also indicated they would drink daily if free drinks could be provided.

4.5.7: Alcohol use at school: The responses to the question of drinking at school are shown in table below.

Table 4.5.7: Drinking alcohol in school (no=361)

	Freq	%
Never	296	81.99
Only once	29	8.03
Once in a while	16	4.43
Many time	20	5.54
Total	361	100

As can be seen from table the above indicates that of 361 learners who indicated they ever drank alcohol, the vast majority of 81.99% indicated they have never engaged in drinking while at school. However, the over 18% who have done so is very significant.

4.5.8: Getting drunk: The responses to the question of ever getting drunk are shown in the table below.

Table 4.5.8: Drinking and getting drunk (no=361)

	Freq	%
Never	121	33.52
Only once	60	16.62
Once in a while	65	18.0
Many time	115	31.85
Total	361	100

As can be seen from the table above, of the 361 learners who indicated that they ever drank alcohol only 33.52% indicated they have never been drunk while a high of 31.85% indicated they have been drunk several times. Overall, 66.45 of learners have been drunk at least once.

4.6.1 Responses to the question: used illicit drugs in the past one month are shown below.

Table 4.6.1: Current use of illicit drugs

	Frequency	% among users	% among all learners
Current	75	85.20	13.5

It can be seen from the above table that a high of 85.5% of learners who ever tried illicit drugs also did so in the past one month.

4.6.2: Lifetime, past month and past week illicit drugs use: The responses to the question regarding frequency of illicit drugs use are shown in the table below.

Table 4.6.2: Lifetime, past month and past week illicit drugs use (no=88)

	Frequency	% among users	% among all learners
Lifetime	88		15.85
Past month	75	85.20	13.5
Past week	65	73.86	11.7
Bingeing	244	67.6	43.96

As can be seen from the table above past month use of any illicit drug stands at 75 learners out of 88, meaning that 85.2% of those who have ever used any illicit drug also did so in the past one month. Also, 65 of the 88 students who reported that they have ever used drugs did so in the last one week; meaning that 73.86% of them used illicit drug during the past one week preceding the survey. However, actual total population based percentages are 13.5% and 11.7% respectively for past month and past week drug use.

4.6.3: Lifetime use of illicit drugs: The responses to the question ever used any illicit drugs, are shown in the table below.

Table 4.6.3: Lifetime use of use of any illicit drug (no=88)

	Frequency	%
Yes	88	15.85
No	467	84.14
Total	555	100

As can be seen from the table above 15.85% of learners had used illicit drugs in their lifetime.

4.6.4: Gender and illicit drugs use

Table 4.6.4: Illegal drug use by gender (no=88)

	No		Yes		P-value
	Freq	%	Freq	%	
Male	197	42	62	70	
Female	259	58	26	30	P=0.0001
Total	456	100	88	100	

As can be seen from the table above majority of illicit drugs users (70%) were males and 30% were females. There was a statistically significant difference regarding use of illegal drugs and gender (P=0.0001).

4.6.5: Illicit drugs use and school grade: The responses to the question ever used any illicit drugs, according to school grade are shown in the table below.

Table 4.6.5: Illicit drugs use by school grade (no=88)

	Yes		No		p-value
	Freq	%	Freq	%	
10	49	56	138	30	P=0.0001
11	22	25	163	35	
12	17	19	165	35	

As can be seen from the table above, majority of illicit drugs users (56%) were in grade 10 followed by grade 11 learners (35%). There was a statistically significant difference regarding use of illicit drugs and gender ($p<0.001$).

There was statistically significant difference between use of illicit drugs and class grade (P=0.001).

4.6.6: Age and illicit drug use:

4.6.6 Lifetime illicit drug use and age

	Drugs users	Non-drugs users	P-value
Students t-test of age	17.5 ± 1.63	17.7± 1.53	0.5459

As shown in table above there was no statistically significant difference in the use of illicit drugs between the different learner age groups.

4.6.7: Commonest illicit drugs used: The responses to the question regarding which illicit drugs they have used are shown in the table below.

Table: 4.6.7 commonest illicit drugs used by learners (no=88)

Drug	Yes		No	
	Frequency	%	Frequency	%
Dagga	81	14.59	474	85.40
Patshe	45	8.10	510	91.89
Nyaope	43	7.75	512	92.25
Glue	23	4.14	532	95.85
Cocaine	16	2.88	539	97.11
Mandrax	16	2.88	539	97.11
Ecstasy	10	1.80	545	98.198

Only the seven commonest ones have been listed; the use of the other agents was uncommon. As can be seen from the table above dagga is the commonest drug used by the learner. The use of patshe and nyaope which combine dagga and other agent were also common.

4.6.8: Provision of free drugs: The responses to the question of provision free illicit drugs are shown in the table below.

Table 4.6.8: Effect of providing free illicit drugs (no=88)

	Frequency	%
No	57	64.77
Yes	24	27.27
Don’t know	7	7.95
Total	88	100

As the table above indicates majority of learners (64.77%) responded that they would not use illicit drugs daily even if free drugs were to be provided, although 27.27% responded they would use drugs daily if provided free.

4.6.9: Illicit drugs use at school: The responses to the question on illicit drugs use at school are shown in the table below.

Table 4.6.9: Illicit drugs use at school (no=88)

	Frequency	%
Never	52	59.09
Only once	9	10.22
Once in a while	8	9.09
Many time	19	21.59
Total	88	100

As can be seen in the table above a great majority of learners who use illicit drugs (59.09%) have never used drugs at school and none does so daily. However, many (21.59%) have used drugs several times at school.

4.6.10: Illicit drugs use by school region: Learners were divided into two according to the location of their school for illicit drugs use. The data were also analysed in batches according to location. The responses are shown in the table below.

Table: 4.6.10 Illicit it drug use by school region (no=88)

	Urban		Rural		
Drug	Frequency	%	Frequency	%	p-value
Dagga	46	24	35	17	0.315
Patshe	24	7	21	9	0.223
Nyaope	32	9	11	5	0.076
Glue	11	3	12	6	0.156
Cocaine	13	3	3	1	0.104
Mandrax	13	3	3	1	0.104
Ecstasy	5	1	5	2	0.438

As can be seen from the table above, the most common illicit drugs used by learners were dagga 81(20.5%), patshe 45(8%), nyaope 43(7%), and glue 23(4.5%). Of the students who reported ever using dagga, 35(17%) were from rural schools and 46(24%) were from urban schools (p=0.315). No significant difference was observed between rural and urban students with regards to the use of any illicit drug.

4.7.1: Strongest factor for abstinence: The responses to the question concerning factors that could influence learners abstain from drugs use is shown in the table below.

Table 4.7.1: Factors that could influence learners stop using any agent (no=555)

Factor	Rural		Urban		Total	
	Freq	%	Freq	%	Freq	%
Bad effect	53	46	126	51	182	49
Girl/Boy/Friends	14	12	13	13	27	7
Brother/Sister/Relatives	6	5	5	2	11	3
Mom/Dad	18	16	36	36	54	15
Teacher/School rules	4	3	7	7	11	3
Drug expensive/Other	21	18	64	64	85	23

As above table indicates the most frequent factors given by learners about what could influence them to abstain from any habit forming substance is bad effect of the drug (46% and 49% by learners from rural and urban schools respectively) and cost (18% rural and 15% urban, respectively).

4.7.2: Tobacco, alcohol and drugs use and school region: Learners were divided into two groups according to the location of their school for smoking, alcohol and other drugs use. The data were also analysed in batches according to location.

Table 4.7.2: cigarette, alcohol and illicit drugs use: urban versus rural schools (no=555)

	SMOKING				ALCOHOL USE				ILICIT DRUG USE			
	YES		NO		YES		NO		YES		NO	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
rural	40	19	172	81	112	53	100	47	39	18	173	82
urban	116	34	227	66	249	73	94	27	49	14	293	86
p-val	0.0001				0.0001				0.2030			

As the table above indicates far more urban learners (74%) were smokers than their rural counterparts (26%). Also, in terms of alcohol use far more urban learners (69%) were using alcohol than rural learners (31%). However, there was no significant difference in terms of illicit drugs use between urban and rural learners.

4.8.1: Smoking, alcohol and illicit drugs use and school attendance: The responses to the question about regular school attendance are shown in the table below.

Table 4.8.1: Substance use and school attendance (no=555)

School attendance	Drug user		Non drug user		p-value
	Frequency	%	Frequency	%	
More regular	8	9	62	13	0.005
Same as before	63	72	367	79	
Less regular	17	19	36	8	

As can be seen from the table above learners who reported not using tobacco, alcohol or drugs had better school attendance than those who were involved in smoking, alcohol or illicit drugs use. Non substance users reported less irregular school attendance (8%) compared to (19%) reported by substance users.

4.8.2: Smoking, alcohol and illicit drugs use and punctuality to school: The responses to the question how would you rate your punctuality to school before and after you got involved in smoking/alcohol/drugs use are shown in the table below.

Table 4.8.2 Smoking, alcohol and drugs use and punctuality to school (no=555)

Punctuality	Drug user		Non drug user		p-value
	Frequency	%	Frequency	%	
More punctual	14	16	109	23	0.001
Same as before	33	38	278	60	
Less punctual	41	47	78	17	

The table above indicates that non substance users were more punctual to school. Those not involved in smoking, alcohol and other drugs use reported less lateness (17%) compared to those who were smoking, using alcohol or other drugs (47%).

4.8.3: Smoking, alcohol and illicit drugs use and home study: The responses to the question of how would you rate your home study before and after you got involved in smoking/alcohol/drugs use is shown in the table below.

Table 4.8.3: Smoking, alcohol and drugs use and home study (no=555)

Home study	Drug user		Non drug user		p-value
	Frequency	%	Frequency	%	
More serious	11	13	164	35	0.001
Same as before	23	26	214	46	
Less than before	54	61	87	19	

As can be seen from the table above, non substance users were more serious with home study. Those involved in smoking, alcohol and other drugs use reported less seriousness (61%) compared to those who were not smoking, using alcohol or other drugs (19%).

4.8.4: Smoking, alcohol and illicit drugs use and academic performance: The responses to the question how would you rate your school performance before and after you got involved in smoking/alcohol/drugs use is shown in the table below.

Table 4.8.4: Smoking, alcohol and drugs use and perceived academic performance (no=555)

School performance	Drug user		Non drug user		p-value
	Frequency	%	Frequency	%	
Much improved	19	22	214	46	0.001
Same as before	9	10	163	35	
Poor	60	68	88	19	

As can be seen from the table above, non substance users were more likely to have better school than those indulging in substance use. Those not involved in smoking, alcohol and other drugs use reported less poor academic performance (19%) compared to those who were smoking, using alcohol or other drugs (68%).

4.8.5: Smoking, alcohol and illicit drugs use and class repeat: Responses to the question on class repeat are given in the table below.

Table 4.8.5: Smoking, alcohol and other drugs use and class repeat (no=555)

Class repeat	Drug user		Non user		p-value
	Freq	%	Freq	%	
Never	31	35	363	78	
Repeated before	9	10	20	4	0.001
Repeated after	48	55	68	15	
Repeated, non drug user	0 (0)	0	14	3	

As can be seen from the above table 55% of learners who smoked, used alcohol or other drugs repeated a class after they developed the habits, while only 22% of non substance users repeated a class.

4.8.6: Smoking, alcohol and illicit drugs use and school attendance by school region: Responses to the impact of substance use on school attendance are given in the table below.

Table 4.8.6: Smoking, alcohol and other drugs use and perceived impact on school attendance: urban versus rural learners (no=555)

School attendance	Rural		Urban		p-value
	Freq	%	Freq	%	
More regular	34	16	36	11	0.001
Same as before involvement	148	70	283	83	
Less regular after involvement	30	14	23	6	

The table above illustrates the differences in perception between urban and rural students regarding the influence of smoking, drinking, and use of illicit drugs use on their school attendance. 14% of rural learners were less regular at school while amongst urban learners only 6% were less regular.

4.8.7: Smoking, alcohol and illicit drugs use and punctuality; urban versus rural schools: Responses to the impact of substance use on punctuality to school are given in the table below.

Table 4.8.7: Perception regarding punctuality to school between urban and rural learners (no=555)

Punctuality	Rural		Urban		p-value
	Freq	%	Freq	%	
More punctual	52	25	71	21	0.150
Same as before involvement	108	50	203	59	
Less punctual after involvement	52	25	68	20	

As can be seen from the above table there was no significant difference in perception regarding punctuality to school between urban and rural learners.

4.8.8: Smoking, alcohol and illicit drugs use and home study; urban versus rural: Responses to the impact of substance use on home study are given in the table below.

Table 4.8.8: Perception regarding home study between urban and rural learners (no=555)

Home study	Rural		Urban		p-value
	Freq	%	Freq	%	
Became more serious	64	30	111	32	0.577
Same as before involvement	97	46	141	41	
Less serious after involvement	51	24	90	26	

As can be seen from the table above there was no significant difference in perception regarding seriousness at home study between urban and rural learners.

4.8.9: Smoking, alcohol and illicit drugs use and perceived academic impact: urban versus rural: Responses to the impact of substance use on school performance are given in the table below.

Table 4.8.9: perception regarding school performance between urban and rural learners (no=555)

School performance	Rural		Urban		p-value
	Freq	%	Freq	%	
Much improved	98	46	135	40	0.196
Same as before involvement	65	31	107	31	
Poor after involvement	49	23	100	29	

As shown in the table above, 172 learners indicated their school performance remained steady even with after getting involved in substance use while 149 indicated their school performance deteriorated. There was no significant difference between urban and rural learners.

4.8.10: Smoking, alcohol and illicit drugs use and class repeat: urban versus rural: Responses to the impact of substance use on repeating a class are given in the table below.

Table 4.8.10.: Smoking, alcohol and other drugs use class repeat (no=555)

Repeat class	Rural		Urban		p-value
	Freq	%	Freq	%	
Never	135	64	259	76	0.001
Repeated before involvement	21	9	9	3	
Repeated after involvement	51	24	65	19	
Repeated but no drug use	5	2	9	3	

As the above table indicates, 24% of learners in rural schools repeated class after they got involved in smoking, drinking and the use of drugs and 19% of learners in urban schools repeated class after they got involved in smoking, drinking and the use of drugs. There is a significant difference observed between rural and urban students with regards to repeating a class/classes ($p<0.001$).

CHAPTER FIVE

DISCUSSION

5.0 INTRODUCTION

The discussion is going to be done under the following headings: smoking, alcohol use, illicit drug use, influence of substance use on school performance and rural/urban/male/female substance use difference.

5.1. SMOKING

5.1. The result of this study indicates that cigarette smoking is common among high school students in the Mogalakwena municipality. The result shows life-time cigarette use of 28% and current smoking (prevalence) of 20% among high school learners within the Mogalakwena municipality. This result is similar to results emanating from current research in South Africa regarding high school students' involvement in the use of alcohol and other drugs. According to the result of the 2008 school survey[113]smoking rates among leaners showed decline up to 2002 and that there has been no change between 2002 and 2008. The result of this study in terms of smoking is incomplete tandem with current national trends. Looking at the national trends starting from the report by Flisher and his colleagues in 1993 which reported a prevalence of 50.7% among black youths from both previously disadvantaged and advantaged communities[4], then Yach and Parry[25] noted that by 1995 smoking prevalence among African and coloured men was more than 50% and that of African and Asian women was estimated to be less than 10%. The downward trend continued with the first South African demographic and Health survey[108]of 1998 reporting current (last 30 days) smoking prevalence of 42.2% among male respondents and 11% among females, then the national smoking prevalence among adolescents estimated at 32% in 1992 and 24% in 2003. In the national household survey reported by Reddy and colleagues[9] they indicated that between 1999 and 2002, when the second wave of data was collected, smoking rate had decreased from 46.7% to 37.6 and the Henry Kaiser Family Foundation[7] reported smoking prevalence of 22% in 2001, while Madu and Matla[107] in 2003 also reported a prevalence of 22% among adolescent high school students in the Pietersburg area of Limpopo Province. In a study involving six African countries Pelzer[16], also reported past month smoking rate of 12.6%, among high school learners. The result of the 2002 school survey mentioned earlier indicating life-time cigarette smoking of 30% has remained steady at 29.5% in 2008 and

current smoking of 21%. The current study also indicates that 20% of the high school learners reported that they had smoked cigarette in the past month preceding the survey. The 20% is within the same range as recent research findings enumerated above. However, one study by Flisher, Evans et al in 2002 showed a much higher prevalence. They reported lifetime smoking prevalence of 46.1% in their first study, and follow up study found a prevalence of 48.9%[82], showing an upward trend. The finding here is also much lower than European figure of 58% lifetime smoking and past month rate of 29%.

This current study also shows that more males smoked than female learners. This finding in is in line with many similar studies undertaken in South Africa, including those cited earlier. This study also reveals that smoking rate is higher among younger learners than their older counterparts. This finding is consistent with findings in some recent studies, which indicate that the age of adolescent or high school learners who abuse or use substance has been getting younger. This finding may also indicate that substance use by high school learners is either nearing peak or it has peaked already. The fact that children are getting involved in smoking early now is a serious challenge, given the long term consequences that are associated with smoking.

The fact that the level of smoking among learners has dropped from above fifty to lower twenties is significant and good news. However, the fact that many studies suggest that smoking is the gateway to the use of other drug, 20% should still be a cause for concern. If 20% of the population are smokers, the secondary smoking effect on the 80% non-smokers will still pose significant problem to the society at large. Besides, if the 20% become more vulnerable to the use of other agent, this is also not good for the individuals, their families and the nation at large. In addition, the fact that it has remained steady in the lower twenties for several years now means current cessation programmes are no longer working and, therefore, consideration should be given to change of tactics.

5.2. ALCOHOL USE

5.2.1 The result of this research shows high level of alcohol consumption by high school students. The result shows that about 65% of the high school learners had used alcohol at least once in their life-time. The result also shows that about 59.9% of learners were current drinkers. In 1993 Flisher and his colleagues[15] found past month alcohol use of 31% among Cape High school learners. In 1994 the South African Community Epidemiology on Drug use report[43] reported that 50% of adolescents reported regular use of alcohol and in 1996 Rocha-Silva et al[3] who studied the drinking behaviours of black youths aged 18 years to 21

years, reported lifetime alcohol use of 42%, with 34% of them reporting drinking within the last one month and were thus classified as current drinkers. Again, in 2006 Pelzer[28] reported that between 1993 and 2006 drinking prevalence ranged from 21.55 to 62% and the South African Demographic and Health Survey report of 1998[108] involving people aged 15 years and older showed a prevalence of 45% among males and 17% among females. In addition, the result of the 2002 school survey indicated that 49% of learners were engaged in the use of alcohol and the repeat survey of 2008 reported lifetime use of 50% and current use of 35%. The study by Madu Matla[107] high school learners aged 15years to 19 years in the Petersburg area of Limpopo referred to earlier found that 39.1% of the learners were current drinkers. Several studies, including large cohort studies, have demonstrated that a large proportion of South African high school learners are involved in alcohol and other drugs use; all indicating that alcohol is the most common substance of abuse. In 2002 Parry et al[47] who reported on alcohol use from a study involving grade 11 in state funded schools in Cape Town and Durban also reported high level of alcohol use. They reported life-time alcohol use as 66.4% among male learners and 47.8% among females in Cape Town. For Durban, they reported life-time alcohol use of 63.4% for males and 32.9% among females. In 2003 Flisher et al[5] reported a prevalence of 53.2% among high schools students in the Cape Peninsular and the same year Weir-Smith who reported life-time use of alcohol of 80% among males and 68% among females[46] among learners in Gauteng and Limpopo reported and also reported that 50% of them indicated that they were current drinkers. Also among grade 10 learners Taylor et al[30] found life-time alcohol use of 52.9 among males and 25.5% among females. In addition, Pelzer in his study involving six African countries found that 12.6% had used alcohol in the past 30 days and 6.6% were drinking at harmful levels[16]and in 2010 the 2008 national school survey was published reporting 50% lifetime use and 35% current use.

A closer examination of alcohol use trends does not show any real pattern. There are wide variations between findings within the same periods, fluctuating pattern of rising and falling and wide variation between different regions. The combined life-time use of 65% found in this study is lower than that of Weir-Smith but falls within the range of alcohol use by South African adolescents reported by other studies enumerated above. Unfortunately, most reports do not mention the life-time use. Unlike smoking there is such a huge difference between the findings in this study and those of madu, just 60kms away. This may be due to the fact that more high school students are using substances now and also the fact that the age of onset of substance use is getting lower and lower. Again, like with smoking, there is no significance difference in drinking prevalence between different age group. This will also be

explained by the fact that adolescents are getting initiated into substance use much earlier than previously. The past month rate of alcohol use was found to be 59.9%. This is very high by any standard. Many other studies use the term current and past month drinking interchangeably. The SACENDU report mentioned earlier reported regular drinking of 50%, the first South African Demographic and Health Survey indicated 28% of the sampled population were regular drinkers.

Considering the fact that alcohol use by young and old is associated with many acute and long term complications, there remains a big challenge regarding cessation. The fluctuating prevalence patterns reported clearly indicates that current cessation programmes are and working and, therefore, new approaches may be reasonable. While still waiting for effective approaches to cessation it means we still have to live with the multitude of psycho-social, physical, academic problems associated with alcohol use and the financial burden on the department of health and social development.

5.2.2 PAST MONTH DRINKING

The 59.9% past month drinking is higher than in all the South African studies mentioned above and this is disturbing. Although the result here for past month is higher than for most other studies in South Africa, it is close to one. The result is close to that obtained by Weir-Smith whose study was undertaken in Bela-Bela, which is within the Waterberg district where this study was undertaken. The result also indicates that males are much more involved with drinking than females and it represents a significant statistical result. This is similar to many similar studies in South Africa. The prevalence obtained here is lower than the current level of high school alcohol consumption in the USA. Also according to the 2008 result of the Monitoring the Future[109], alcohol consumption remains high despite the declining trends in terms of smoking and drug use, especially if dagga is excluded. They reported that 72% of adolescents have taken alcohol more than just a few sips by grade 12 and 39% by grade 8. However, the urban level of 73% obtained in this study compares with the US findings.

The high level of current drinkers found in this study and that of Weir-Smith from the same region means there is a real big challenge regarding alcohol use in this district and urgent steps are needed to address this malady.

5.2.3 BINGE DRINKING:

The rate of binge drinking was found to be 43.96%. The 1998 Demographic and Health Survey[108] reported that 33% of those sampled were drinking at dangerous levels. The 2002

school survey reported binge drinking prevalence of 23% while SACENDU[110]report of 2002 showed 36% bingeing. According to Pelzer and colleagues[28] mentioned earlier the binging rate between 1998 and 2005 was 14% to 40% but that of adolescents in the age range 15 years to 24 years had increased from 29% to 31%. Therefore, the result in this study may represent that upward trend reported by Pelzer and colleagues. In 2006 Flisher et al reported 26.2% binge drinking and 15.4% reported doing so in the past two weeks. Statistics from the Medical Research Council indicate that the rate of binge drinking is 33% for males and 20% for females. The result obtained in this study for binge drinking is higher than those obtained from most studies undertaken in South Africa, but lower than those obtained by Parry and colleagues in the Durban study. Parry et al also reported binge drinking rate of 36.5% among male learners and 18.7% among females in Cape Town and also 53.3% among males and 28.9% among females in Durban in the two weeks preceding the survey. However, the report by Parry and colleagues is on, 1998. The result here is also lower than European figures. The World Health Organization has repeatedly reported that binge drinking poses more risk than ordinary frequent drinking. Some recent studies have also demonstrated that, even the so-called cardiovascular beneficial effects of alcohol disappears if there are also episodes of bingeing, therefore, the high rate of binge drinking obtained in this study should be a serious cause for concern.

5.3 ILLICIT DRUGS USE

5.3.1 The study shows that 16% of the learners have used one or more drugs at least once in their life-time. As with smoking and alcohol, this level of drugs use is something to worry about, even though less than smoking and drinking. In 1993 Rocha-Silva and colleagues[15] reported that 7.4% of their sampled learner population indicated they sniff glue or petrol, 3.8% were using dagga. Also, the 1998 South African demographic and health survey[108] indicated that current use of dagga was 3% among grade 8 and 16% among grade 11; use of Mandrax was reported as 1.6% for grade 8 and 5% for grade 11. The result of the 2002 school survey[28] indicated a prevalence of 12.8% dagga use nationally. In 2003 Madu / Matla[107] who had a similar study in the Pietersburg area obtained a prevalence of 12%, but this was six years earlier and Weir-Smith[46] in the same year reported the highest level of dagga use among South African learners of 76.5% in Gauteng and Limpopo Provinces. Also in 2009 Pelzer[16] in his study, involving learners in six African countries, reported 10.5% life-time drug use. The European school survey of 2007[14] reported lifetime drug use of 23%

among males and 17% among females. Part of Weir-Smith's study covered the Waterberg region, where the current study was undertaken. The reported rate by Madu and Matla did not state clearly whether it was life-time or current use. However, because it stated that, that percentage was using drugs, it is reasonable to assume this is referring to current use. The difference between the current level and that obtained by Madu is minimal. This contrasts with the difference in levels of alcohol between Madu's finding and the findings of this study. It is therefore, plausible to assume that just like the Mogalakwena Municipality drugs may be everywhere and easy to obtain in the Capricorn District. Again, as with alcohol and smoking, there was no significant difference in drugs use between the different age groups. The result of this study is consistent with findings in the USA and many other countries around the world. The current study also indicates that there is no difference between urban and rural use of drugs. This is similar to the findings of the Monitoring the Future studies in the USA. In its 2008 report, O' Malley et al stated that there was no consistent difference in drugs use between large cities and small cities. Here again, as with alcohol and smoking there was significant difference in the prevalence in the use of drugs in terms of class grade. Again, lower grades are more involved in the use of drugs than higher grades. More learners in grades 10 (56%) used illicit drugs compared to learners in grade 11(25%) using illicit drugs, and in turn more grade 11learners are using illicit drugs compared to learners in grade 12 (19%) who are using drugs. It was also noted that dagga is by far most widely used than any other drugs. This finding is consistent with research finding from South Africa, USA and other parts of the world. However, considering the attractiveness of drugs in the adolescents' age group and the dropping age of users, the socio-economic consequences may be serious.

5.4.0 PERCEIVED INFLUENCE OF SUBSTANCE USE ON SCHOOL PERFORMANCE

5.4. The results of this study indicates that those students who smoke, use alcohol and other drugs perform poorly in school when compared to those who do not indulge in these behaviours. Accordingly, 19% of students who use substances report that they are less regular at school whereas only 8% of non-substances users reported being less regular. This agrees with some other findings in South Africa and elsewhere[111, 89, 90]reported in 1996, 1994 and 1994 respectively. In 2000 Turner[98]reported that adolescents who engage in these indulgences are less regular at school and are also more delinquent than those who do not smoke, drink or use other drugs. In 2003 Flisher et al[82] reported that substance use impacted negatively on academic performance among Cape high school learners and also reported

school dropout rate of 54% over a period of four years. However, in 2007 Reddy and his colleagues[83] found that while use of alcohol and other drugs impacted negatively on academic performance among US high school learners, this did not manifest among high school learners in South Africa. In 2007 Shehu and Idris[81] also found that high school students who use dagga attend school less regularly than those who do not use dagga. However, they also suggested that the poor academic performance of students who use dagga might be due to poor school attendance rather than intellectual capacity. Also in 2010 a study by Flisher et al also failed to show this association among high school learners in South Africa. Students, who smoke, drink and use drugs also reported to be less punctual at school. 47% students who use substances indicated that they are less punctual at school, whereas only 17% of students not using substances reported to be less punctual to school. Also 54% of substance users reported that they are less serious at home study and only 19% of non-substance user reported to be less serious at home study. The result also indicates that students who use substance repeated classes far more than non-substance users. 56% of students who use substances reported they repeated a class after getting involved in the use of substances whereas only 19% of non-substances users reported repeating a class. In terms of overall academic performance, 60% of students who use substances rated their school performances as poor and only 19% of non-substances users rated their academic performances as being poor. Several other studies in South Africa and elsewhere have repeatedly shown that use of alcohol and other drugs correlate negatively with good school performance. As previously indicated, researchers have employed both direct and indirect methods to try to understand the relationship between substance use by learners and academic performance. However, just as has been shown elsewhere, findings from research in South Africa also has demonstrated the complicated and controversy associated with the issue of alcohol and other drugs use and academic performance. Well, it is possible that both studies are correct depending on the focus and methodology of their research. It is however, worthy to note that the studies as reported by Reddy et al and Flisher did not take into account the absenteeism on the day of survey and those learners who had dropped out of school due to substance use.

5.5. RURAL-URBAN AND MALE/FEMALE SUBSTANCE USE DIFFERENCE

Report on differences between urban and rural use and male and female use of alcohol and other drugs have not been consistent. While some studies have demonstrated equal use

between urban and rural, others have shown higher rates in urban than rural schools. In addition, some other studies have demonstrated higher rates in rural than in urban schools. In a similar manner several reports indicate that males use substances more than females but many recent studies in the developed world indicate females have caught up with their male counterparts in the use of many drugs. The result of this study indicate that the prevalence rate of smoking by urban learners exceed the national average while that of rural area is lower than the national average. The results indicate that 53% of rural school learners and 73% of urban school learners have consumed alcohol more than just a sip. The results also indicate that 28% of learners reported smoking. Of these number 26% of them were from rural schools and 74% from urban schools. The result thus shows that cigarette smoking is far more common among urban learners than rural learners. In terms of illegal drug use the result shows that 16% of the learners reported that they have ever tried any illegal drugs. Of the 16%, 44% of them were from rural schools and 56% from urban schools. Statistically there is no significant difference between urban and rural learners' use of illegal drugs. This is similar to many other studies but it is in contrast with the findings of Tsering[112] in India and Cronk and Sarvela[61] in the USA reported in 2008 and 1997 respectively. Both Tsering, and Cronk and Sarvela reported higher levels of smoking among rural learners than urban learners. However, Cronk and Sarvela also reported urban learners reported higher levels of all substances but at the end of their study over four years, the differences had disappeared in all the substances, except in smoking. In 1995 Joun and et al[64] also reported a higher level of cigarette smoking among Korean urban secondary school learners than their rural counterparts, which is similar to the findings in this study. There was a statistically significant difference between the levels of alcohol consumption between urban students and rural students in this study. The 2005 report of the Monitoring the Future[62] in the United States had also indicated that the urban-rural substance use difference among high school learners was disappearing fast. As shown in this study the level of alcohol use and cigarette smoking by these learners are higher among urban than rural learners but the level of illegal drugs use is the same. Also, according to the latest American National Survey on Drug Use and Health[101], the prevalence of substance use among rural adolescents has now surpassed urban levels. In terms of illegal drugs use, as indicated earlier the prevalence found was the same between rural and urban learners. This is no surprise, as many studies mentioned earlier have shown either equal levels or in some instance the prevalence in rural areas have actually overtaken the urban levels. It therefore, means that drugs are everywhere and it is easy to obtain them. Given the fact that rural Africans remain conservative and have tighter family bond and

greater parental control, it is difficult to speculate firmly any reason why the rural urban substance use gaps have closed regarding some substances, while the gap still remains in the use of some other agents. This may be due to the improvement in rural incomes or the deterioration in the standard of living of the urban poor. In addition, the improvement in communication in terms of improved road network and other modern facilities in rural areas may as well be contributory to this closing gap. However, whatever is responsible for the closing gab in substance use between rural and urban areas this shift is sure to result in serious societal dislocation if step are not taken urgently to curtail the drift.

5.6 CONCLUSION:

The findings in this study suggest that alcohol and other drug use by high school learners in the Mogalakwena municipality is common. These findings support the findings of Madu and Matla[107], who did a similar study in the Petersburg area of Limpopo Province. Similarly, several other studies carried out in South Africa also suggest that the use of alcohol and other drugs by high school learners is widespread. Studies in other parts of the world reveal similar trends. Risk factor analyses also suggest that antecedents to alcohol and other drugs use by high school learners are similar but that there are cultural and regional variations. The South African Youth Risk Behaviour of 2002 for grades 8 to 11 reported lifetime smoking, alcohol and dagga use of 30.5%, 49.1% and 12.8% respectively. The reported prevalence of binge drinking was 23%. In the 2008 edition of the same survey[113], they found lifetime prevalence of 29.5%, 49.6% and 13% for smoking, alcohol and dagga use respectively. In addition, the prevalence of binge drinking was 29%. It can be noted that, except for bingeing, all the other parameters have remained steady between 2002 and 2008. In the current study the lifetime smoking of 28% and drug use of 15.85% are similar to the above two nationwide cohort studies. However, the lifetime alcohol use of 65% and binge drinking of 67.6% found in the current study is far higher than the 49.6% and 29% respectively for lifetime alcohol use and bingeing reported in the last national youth survey. Although the study populations are similar the difference may be due to the fact that the national surveys cover the whole country with great regional variations, while the current study is confined to a small region. This can be buttress by the fact that a similar study in Bela-Bela which is within the same Waterberg district also found similar high prevalence as the current study. The one thing that is not in dispute however, is the fact that binge drinking is still skyrocketing and this has serious implications for the health, socio-economic and academic wellbeing of the learners and the nation. Several studies have demonstrated strong links between alcohol and illicit drug use

and poor health outcomes and many societal vices. Adolescent users of alcohol and other drugs are said to be more likely to be sexually active, engage in risky sexual behaviours like unprotected sex and multiple sexual partners. In addition, such adolescents have increased incidence of sexually transmitted infection, including HIV and unplanned pregnancies. Of course these problems eventually lead to increased morbidity and mortality and school dropout. Drugs and alcohol use also have independent effects on both academic performance and school dropout. In the same vein studies have also demonstrated a strong link between substance use and crime. In one study in 2002 mentioned earlier it was reported that majority of people arrested for house breaking, for motor vehicle theft and rape tested positive for drugs other than alcohol. In addition, many other studies have demonstrated strong links between alcohol use and crime. Both illicit drugs and alcohol use have been repeatedly demonstrated to fuel crime in addition to their contribution to both intentional and unintentional injuries, including motor vehicle accidents, fights, falls, homicide etc. All these fallouts from these indulgencies result in premature mortality, serious morbidity, disabilities, loss of employment, domestic violence etc. The other aspect of the current study that is alarming is the findings that younger and lower grades reported higher rates of smoking, alcohol and drug use. In addition, although majority of learners indicated that even if they were provided everything for free they would not use them daily, a high of 27.27% indicated that if illicit drugs are provided free they would use them daily, meaning that drugs are more attractive, which should be a cause for concern. Again, the fact that cost is less of a constraint than side effects also has serious implications. This means even if cost goes up they may still be able to afford them, but how? Surely, they may either turn to crime to get the money or divert money meant for some other purposes. If side effect is the strongest factor that may encourage cessation it means this may be important consideration when planning cessation programmes, even though some may consider this scare tactics.

5.7 LIMITATION OF STUDY:

It must be stressed here what is perhaps obvious; that a study on alcohol and other drug use by high school learners that is so narrow in scope in a topic that is so ramified in its import and implications as this one, should be extrapolated into the general adolescents or high school learners population with utmost caution. This study in its limited scope cannot unravel the myth that is drug and alcohol use, whether in adults or children. There are several limitations to the design and other issues as previously outlined. In addition, due to the

sampling procedure this study cannot be viewed as representative of 15-23 year old high school learners of the Mogalakwena municipality.

CHAPTER SIX

6.1 CONCLUSSION

The aim of this research was to determine the prevalence of smoking, alcohol and drug use and the perceived impact of such use on the academic performance of high school students in the Mogalakwena Municipality. To a large extent, these objectives have been achieved, given the results obtained. Results of this study indicate that smoking, alcohol and drug use are prevalent among high school students in the Mogalakwena municipality and are also perceived to be positively associated with all indices of academic performance. The results also shows that bad effects, high cost and parents are the three commonest factors that were reported that could influence learners to stop the use of any of the substances. Although learners in the urban schools were more likely to indulge in smoking and alcohol use than their rural counterparts, there is no difference in the prevalence of illicit drug use between students in urban and rural schools. In addition, the prevalence of alcohol use is commoner among younger learners than their older counterparts. It is also hoped that the trends noted above will be taken into consideration by people involved in planning campaign programmes aimed at encouraging adolescents and young students to abstain or quit these habits.

6.2 RECOMMENDATION

- Community based education programmes to enable parents recognise when their children may be using alcohol and other drugs
- Early intervention using schools as platform for such campaign because children are indulging in substance use early now.
- Campaign to emphasis both acute and long term side effects of substance use
- Increased taxation on alcohol and tobacco products

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Appendix 1

INFORMATION FOR PARTICIPANTS

My name is Dr O. I. Owo. I am doing a postgraduate degree in Family medicine with the University of Witwatersrand, Johannesburg.

I am asking you to take part in a research I am doing for the postgraduate degree in the Faculty of Health Sciences. This research is being carried out here in the Mokgalakwena Municipality of Limpopo Province. This research is intended to assist us learn more about the use of alcohol and other drugs by high school learners. It is hoped that the result of this research will assist people who are responsible for school policies understand what make school children get involved in smoking, drinking and use of other drugs, especially very early in life. This understanding, it is hoped, would assist managers come up with better and more appropriate ways of assisting those who may need help. The questionnaire will take about 30 minutes to complete.

Any information given by you for this research will be treated with the strictest of confidence. Your names and addresses are not needed, so no one would know the information belongs to you. I am the only person who is going to see and use the information for the purpose I mentioned earlier.

If you do not want to take part in this study, you are free to do so and no action will be taken against you. If you choose to take part, you may still decide to withdraw your participation at any stage of the research and your wish will still be honoured. There will still be no action against you.

If you have any questions now or at any other time, please feel free to ask. You are also at liberty to contact me any time, should have any concern regarding anything I have said here, either verbally or on this information sheet.

CONTACT DETAILS:

NAME: Owo Ikwa Owo

Mokopane Prvincial Hospital

Private Bag X2466

015-4834000

0729689538

Thanks.

Appendix 2

QUESTIONNAIRE SOCIODEMOGRAPHICHIC INFORMATION

I will ask questions about yourself and your family, and then some of the things that you do. Please be as honest as possible. Your names and addresses are not required, so nobody will know the information belongs to you.

Please choose only one answer, although in some of the questions you may choose more than one option and in cases where you cannot choose among the given answers, please choose "other"; and then specify your response. Make your marking on the questionnaire and when you have any question concerning this questionnaire; please feel free to ask me.

PERSONAL INFORMATION

1.1 How old are you? ----------

1.2 Sex:

Male	
Female	

1.3 What grade are you in?

Grade 10	
Grade 11	
Grade 12	

FAMILY CHARACTERISTICS

2.1 I am living with:

Both parents together	
Mother only	
Father only	
Grandparents	
With relatives	
Other (Specify)	

2.2 Number of people living in your house:

Two	
Three	
Four	
Five	
Six or more	

2.3 What is the main source of money for the family?

Both parents working	
Father working	
Mom working	
Brother/sister working	
Relatives working	
Social grant/Pension	
Other (specify)	

SUBSTANCE USE SCALE

3.1 Have you ever smoked a cigarette? [YES] [NO]

If your answer to the above question is **NO** then proceed to 4.1

3.2 During the past one month how many days did you smoke?

Nil	
Between 1 and 10	
Between 11 and 20	
More than 20 days	

3.3 During the past one week how many days did you smoke?

Nil	
1 to 2 days	
3 to 4 days	
More than 4 days	

3.4 If you were to be offered free cigarette would you smoke everyday?

No	
Yes	
Don't know	

3.5 Have you ever smoked while at school?

Never	
Only once	
Once in a while	
Many times	
Everyday	

4.1 Have you ever drunk alcohol? [YES] [NO]

If your answer to the above question is **NO** then proceed to 5.1

4.2 During the past one month how many days did you drink?

Nil	
Between 1 and 10	
Between 11 and 20	
More than 20 days	

4.3 During the past one week how many days did you drink?

Nil	
1 to 2 days	
3 to 4 days	
More than 4 days	

4.4 If you were to be offered free drinks would you drink every day?

No	
Yes	
Don’t know	

4.5 Have you ever drunk alcohol while at school?

Never	
Only once	
Once in a while	
Frequently	

4.6 Have you ever taken more than 5 drinks on one occasion?

Only once	
Once in a while	
Many times	

4.7 Have you ever been drunk?

Never	
Only once	
Once in a while	
Many times	

5.1 .1 Have you ever used any illegal drugs? [YES] [NO]

If your answer to the above question is **NO** then proceed to 6.1

5.2 If your answer is yes, which drugs have you tried? You can tick more than one.

Dagga	
Nyaope	
Glue	
Patshe	
Tik	
Zolo	
Cough mixture	
Mandrax	
White pipe	
Petrol	
Slimming tablets	
Cocaine	
Speed	
Heroin	
LSD	
Ecstasy	
Hashish	
Opium	
Rohypnol	
Ketamine	
Wellconal	
Others (name them)	

5.3 During the past one month how many days did you use drugs?

Nil	
Between 1 and 10	
Between 11 and 20	
More than 20 days	

5.4 During the past one week how many days did you use drugs?

Nil	
1 to 2 days	
3 to 4 days	
More than 4 days	

5.5 If you were to be offered free drugs would you use drugs every day?

No	
Yes	
Don't Know	

5.6 Have you ever used drugs while at school?

Never	
Only once	
Once in a while	
Many times	

5.7 What do you think might make you to stop smoking/drinking or using drugs? You can tick more than one.

Bad effect	
Girl Friend	
Boy Friend	
Friends	
Brother(s)	
Sister(s)	
Relatives	
Mom	
Dad	
School rules	
My teacher	
If it becomes too expensive	
Other (specify)	

PERCEPTION OF ACADEMIC PERFORMANCE SCALE

6.1 How do you rate your school attendance since you got involved in smoking/drinking/drugs?

More regular	
Same as before	
Less regular	

6.2 How do you rate your punctuality to school since you got involved in smoking/drinking/drugs?

More punctual	
Same as before	
Less punctual	

6.3 How do you rate your home study since you got involved in smoking/drinking/drugs?

More serious now	
Same as before	
Less serious now	

6.4 How do you rate your school performance since you got involved in smoking/drinking/drugs compared to before?

Much improved	
Same as before	
Poor now	

6.5 Indicate below how many times did repeat a class **BEFORE** and **AFTER** you got involved in smoking/drinking/using drugs?

Before	After

Limpopo PROVINCE

DEPARTMENT OF EDUCATION
REPUBLIC OF SOUTH AFRICA

TO: WHOM IT MAY CONCERN

DATE: -- AUGUST 2008

SUBJECT: PERMISSION FOR THE RESEARCHER TO CONDUCT A RESEARCH IN MY SCHOOL

DR O I OWO has applied for permission to conduct a research in my school on the topic: ALCOHOL AND OTHER DRUGS: PREVALENCE, RISK FACTORS AND THE IMPACT ON ACADEMIC PERFORMANCE OF HIGH SCHOOL STUDENTS IN THE MOKGALAKWENA MUNICIPALITY, LIMPOPO PROVINCE.

We have discussed the protocol in detail.
The topic will bear direct benefit to both the education system and students.

Permission is hereby granted for DR OWO to carry out the research as proposed.

Thanks in anticipation.

DEPARTMENT OF EDUCATION
ARTS & CULTURE
MATLOUKANA SECONDARY SCHOOL
2008-08-01
PRIVATE BAG X9485, GROVE & KRENG, 0626
LIMPOPO PROVINCE
WATERBERG DISTRICT

PRINCIPAL

(015) 485 0348
079 514 9678

PROUDLY

Limpopo PROVINCE

DEPARTMENT OF EDUCATION
REPUBLIC OF SOUTH AFRICA

TO: WHOM IT MAY CONCERN

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Permission is hereby granted for DR OWO to carry out the research as proposed.

Thanks in anticipation.

1 **PRINCIPAL**

Somo FM 0829365160 (Principal)
Khanyago LJ 0733774523 (DP

PROUDLY

Limpopo PROVINCE

DEPARTMENT OF EDUCATION
REPUBLIC OF SOUTH AFRICA

TO: WHOM IT MAY CONCERN

DATE: -- AUGUST 2009

SUBJECT: PERMISSION FOR THE RESEARCHER TO CONDUCT A RESEARCH IN MY SCHOOL

DR O I OWO has applied for permission to conduct a research in my school on the topic: ALCOHOL AND OTHER DRUGS: PREVALENCE, RISK FACTORS AND THE IMPACT ON ACADEMIC PERFORMANCE OF HIGH SCHOOL STUDENTS IN *THE MOKGALAKWENA MUNICIPALITY*, LIMPOPO PROVINCE.

We have discussed the protocol in detail.
It is anticipated that the findings of this research may be useful to both the education system and students.

Permission is hereby granted for DR OWO to carry out the research as proposed.

Thanks in anticipation.

Thabathe
PRINCIPAL

DEPARTMENT OF EDUCATION
BAKENBERG
SECONDARY SCHOOL
2009 -08- 12
PRIVATE BAG X 2303
BAKENBERG. 0611
LIMPOPO PROVINCE

PROUDLY

Limpopo PROVINCE

DEPARTMENT OF EDUCATION
REPUBLIC OF SOUTH AFRICA

TO: WHOM IT MAY CONCERN

DATE: -- AUGUST 2009

SUBJECT: PERMISSION FOR THE RESEARCHER TO CONDUCT A RESEARCH IN MY SCHOOL

DR O I OWO has applied for permission to conduct a research in my school on the topic: ALCOHOL AND OTHER DRUGS: PREVALENCE, RISK FACTORS AND THE IMPACT ON ACADEMIC PERFORMANCE OF HIGH SCHOOL STUDENTS IN THE MOKGALAKWENA MUNICIPALITY, LIMPOPO PROVINCE.

We have discussed the protocol in detail.
It is expected that the result of this study may be beneficial to both the education system and students.

Permission is hereby granted for DR OWO to carry out the research as proposed.

Thanks in anticipation.

DEPARTMENT OF EDUCATION
NAKONKWETLOU S. SCHOOL
2009 -08-
Principal
BOX 306, REBOUF, 0617
LIMPOPO PROVINCE

PRINCIPAL

PROUDLY

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION

Enq: Mabitsi T.M
Tel: 015 290 9349

To: Whom it may concern.
Selected School Principals

Date: 23 May 2008

SUBJECT: PERMISSION FOR THE RESEARCHER TO CONDUCT A RESEARCH

1. The above matter bears reference.
2. The researcher Dr O.I Owo has requested permission from the Department of Education to conduct a research in some selected schools.
3. **His topic is:** ***ALCOHOL AND OTHER DRUGS: PREVALENCE, RISK FACTORS AND THE EFFECT ON ACADEMIC PERFORMANCE OF HIGH SCHOOL STUDENT IN THE MOKGALAKWENA MUNICIPALITY, LIMPOPO PROVINCE.***
4. Permission is herein granted that he should be allowed to conduct this study.
5. Principals are requested to ensure that the rights of and education of the learners are not negatively impacted upon.
6. We hope that the value of the study will benefit the entire nation.
7. Thanks in anticipation.

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SENIOR MANAGER:
INSTITUTIONAL GOVERNANCE

Cnr. 113 Biccard & 24 Excelsior Street, POLOKWANE, 0700, Private Bag X9489, POLOKWANE, 0700
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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Owo

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER M081011**
PROJECT	Alcohol and Other Drugs: Prevalence, Risk Factors and the Impact on the Academic Performance of high School Students in the Mokgalakwena Municipality-Limpopo Province
INVESTIGATORS	Dr OI Owo
DEPARTMENT	Dept of Family Medicine
DATE CONSIDERED	08.10.31
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 08.11.26 **CHAIRPERSON** .....
(Professor P E Cleaton Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Dr A Wright

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES...

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