THE ROLE OF LOCUS OF CONTROL IN NYAOPE ADDICTION: A MIXED METHOD STUDY IN GAUTENG

by

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Submitted in fulfilment of the requirements for the Doctoral degree in Public Health (DrPH) in the Faculty of Health Care Sciences, at the Sefako Makgatho Health Sciences University

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2016
DECLARATION

I, Lucy Fernandes, declare that this dissertation is my own work. It is being submitted for the degree of Doctor of Public Health at the Sefako Makgatho Health Sciences University. It has not been submitted before for any degree or any examination at this or any other University. I further declare that all sources that I have used or quoted have been indicated and acknowledged by means of complete references.

…………………………………
Date…………………………

Name of candidate
Fernandes L
ACKNOWLEDGEMENTS

I wish to extend my deepest gratitude to all those who assisted in making this study possible and would like to specifically acknowledge the following people:

- My Supervisor, Prof KE Mokwena, for her patient guidance, support and encouragement.

- My colleagues, Prof S Madiba and Dr M Mokgatle, for their advice and guidance.

- My research assistants: Katlego Mokwena, Lutendo Musandiwa, Patience Chuma, Penuel Kunene, Kabelo Maredi, Bongani Mashele, Mlungisi Mashele, Gugu Kunene and Kutlwano Khunou. Without their assistance, this study would not have been possible.

- The management and staff of SANCA for allowing us to interact with their clients.

- My appreciation also goes to all my friends and colleagues for their encouragement, advice and inspiration.

- Special thanks to my husband and family for their support and encouragement and for being there for me throughout this journey.
DEDICATION

I would like to dedicate this thesis to one of the unsung South African heroes who is active in the war against nyaope.

Victoria Thabethe-Yende, also known as Mom Lovie to her “boys” of the 10 Commandments Community Centre, Jiyani section in Tembisa, Ekurhuleni, who has opened her house to nyaope addicts believing that they deserve a second chance.

By giving the nyaope addicts the love and support that they need when the families and communities have given up on them, you are changing their lives for the better.

Thank you Mom Lovie for showing me what an individual can achieve through dedication and hard work under very challenging circumstances.
ABSTRACT

Substance abuse is one of the most significant health and social problems affecting the South African nation. Nyaope which is used by large numbers of young people in many poor South African townships brings a complex challenge in dealing with addiction and crime. Due to the large numbers of addicts and the poor understanding of the drug’s composition and effect on the user, the South African health and rehabilitation services are experiencing challenges in dealing with this epidemic. With anecdotal evidence suggesting nyaope rehabilitation success rates of less than 3% and drop-out rates of 40%, improvement of the rehabilitation rate is a needed focus area. Locus of Control (LOC) is a recognized predictive factor in the onset of substance use and by distinguishing between the personality characteristics (i.e. external LOC or internal LOC), the drug user rehabilitation programmes could be aligned to suit the personality leading to a better chance of success of recovery with fewer cases of re-admission.

The aim of this mixed method design was to describe the role and extent to which the drug user’s LOC orientation influences the use of nyaope in Gauteng. For the quantitative aspect, after convenient sampling and consent, 221 nyaope users completed a self-administered pre-validated questionnaire. A total of 52.0% (115/221) were nyaope users from rehabilitation centres and 48.0% (106/221) were nyaope users from the street; and 85.5% (189/221) males and 14.5% (32/221) females completed the questionnaires. Thirteen statements were given and participants had to choose the option that best described their situation from which the individual’s LOC orientations were calculated. Qualitative data was collected by means of focus group discussions (FGDs) and in-depth interviews (IDIs) mainly with nyaope users from rehabilitation centres making use of a structured interview guide with a set of pre-designed questions. Data collection continued until data saturation was reached. There were a total of 63 participants in the FDGs and IDIs. Research assistants indigenous to and intimately familiar with the targeted population of nyaope users were hired to assist in data collection.

Results indicate that 75.5% of participants could be classified as having an internal LOC orientation which, according to literature, is an indication that they would benefit from a less structured intervention. By applying a less structured programme, human resources could rather be utilized in the structured interventions resulting in a better success rate for rehabilitation programmes as the programme could now be tailor-made based on the user’s LOC orientation. Knowledge of a drug user’s LOC could assist in (1) the planning of prevention programmes, (2) predicting the readiness or willingness of the user to go for treatment, and (3) predict the treatment outcomes depending on the type of treatment the drug user is receiving. This is a very important finding that could be utilized in South Africa’s drug rehabilitation programmes to change relapse among drug users into treatment success.
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<td>BC</td>
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<td>UNODCCP</td>
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CHAPTER 1: BACKGROUND

1.1 INTRODUCTION
Substance abuse is a universal social problem which has a negative impact on the health of the user, the immediate environment of the user and the society as a whole (Fabricius et al, 2007). As mentioned by the World Health Organization (WHO) (1980), some of the consequences of substance abuse include higher risk of coronary heart disease, depression, suicide, interpersonal violence including domestic violence, motor vehicle and other serious accidents, work absenteeism, poverty, family conflict, the spread of the human immune deficiency virus (HIV) /acquired immuno deficiency syndrome (AIDS) and teenage pregnancy (to name but a few). The influence of this health and socio-economic burden reaches across social, racial, cultural, language, religious and gender barriers and, directly or indirectly, affects the South African society as a whole (Substance Misuse: Advocacy, Research and Training [SMART], 2008). This problem is further compounded by the high levels of unmet substance abuse treatment needs, particularly within the poorer South African communities (Myers et al, 2010a).

1.2 SOUTH AFRICAN DRUG POLICIES
It is a requirement that South Africa must take the necessary steps to combat the global drug problem by applying policies and practices agreed to by the world community, but which are also acceptable to South Africa (Department of Social Development [DSD], 2013). Some of the South African policies and practices, as summarised by the Department of Social Development (DSD, 2013) and described by Fellingham et al (2012) that were formulated in response to the relevant United Nations conventions and the conventions of other relevant international bodies include:

•Drugs and Drugs Trafficking Act No. 140 of 1992
  This Act, which is part of the country’s use-reduction strategy, has been amended a few times but basically it provides for the prohibition of the use or possession of drugs; the dealing in drugs as well as the manufacture or supply of certain substances; the acquisition or conversion of the proceeds of certain crimes; for the obligation to report information that could lead to the prevention or combating of a drug offence; for the exercise of the powers of entry, search, seizure and detention in specified circumstances; for the recovery of the proceeds of drug trafficking; and for all drug related matters (Government Printer, 1992).
• The Prevention of and Treatment for Substance Abuse Act, No. 70 of 2008

This Act focuses on prevention, early intervention, treatment and re-integration programmes. This is done by providing for a comprehensive national response to combat substance abuse; by providing mechanisms aimed at the demand and harm reduction of substance abuse through prevention, early intervention, treatment and re-integration programmes for users; by establishing and registering treatment centres and halfway houses; skills development for those working at the treatment centres; and to provide for the establishment of an advisory body, the Central Drug Authority [CDA], with the mandate to assist in the fight against substance abuse (Government Printer, 2008).

• The National Drug Master Plan (NDMP) 2013 – 2017

The NDMP was formulated by the CDA in terms of the Prevention and Treatment of Drug Dependence Act (20 of 1992), as amended, as well as the Prevention of and Treatment for Substance Abuse Act (70 of 2008), as amended, and was approved by Parliament to meet the requirements of all the international bodies concerned, and the specific needs of communities in South Africa (DSD, 2013). The NDMP serves as an outline for the prevention and reduction of alcohol and substance abuse and its associated social and economic consequences.

• The United Nations Drug Control Programme (UNDCP)

This document, which is published by the United Nations, can be regarded as a “drug master plan” and is a summary of the operational plans which include policies, priorities and responsibilities regarding drug control efforts of all global government departments and entities involved in the control of drugs (DSD, 2013).

1.3 SUBSTANCE ABUSE DATA FROM SOUTH AFRICA

In essence, in the illicit drug trade there are two domains, namely supply and demand, where supply refers to the manufacture, cultivation, production, processing, smuggling, distribution and sale of illicit drugs, and demand refers to an individual’s desire to consume or use an illicit drug (Ryan, 1997).

Until the late 1990s, the availability of substance abuse data from South Africa was very limited as the information mostly came from ad hoc cross-sectional studies, often conducted in a single location, and from information on police arrests and drug seizures, mortuaries and school surveys (van Heerden et al, 2009). Recently, data gets recorded from national surveys as well as the data obtained from the South African Community Epidemiology Network On Drug Use (SACENDU) project, which meets
biannually to present and discuss information about substance abuse patterns (van Heerden et al, 2009).

Following are some statistics taken from a South African snapshot survey that was done from June 2010 – March 2011 by the CDA (Wedorecover, 2011; Parliamentary Monitoring Group [PMG], 2011) to gather quantitative and qualitative data on substance abuse from the nine provinces of South Africa; as well as data published by Raynard and Wolvaardt (2006) after doing a study in three South African Metro’s, namely Cape Town, Durban and Johannesburg. Their findings were:

- Substance abuse in South Africa is double that of the global average with South Africa ranking in the top 10 countries with regard to the amount of alcohol being consumed each year.
- From those surveyed, 65% admitted to having a drug user in their home.
- The most frequently used drugs were alcohol, cannabis, tobacco and glue.
- The use of dagga, cocaine and tik was twice as much in South Africa as worldwide.
- An estimated two million people in South Africa could be classified as ‘problem drinkers’.
- More than 37% of adults were binge drinkers; 10% of drivers were drunk on a Monday morning; and an estimated 7 000 deaths occurred per year due to driving under the influence of alcohol.
- The social and economic cost of alcohol abuse is an estimated R130 billion per annum.
- The CDA estimates that approximately 7 000 people die each year due to drunken driving.
- Children as young as 12 years have become addicted to drugs and alcohol.
- South African schools have been targeted by drug dealers where drugs have been disguised in tattoos, lip balms and even lollipops.
- Former drug dealers claim that they are able to make R18 000 per day while an addict may spend an average of R5 000 each day.
- Substance abuse was different for men and women, but amongst females addiction occurred faster than that in males.
- The estimation is that women that were addicted to drugs were 46% more likely to be victims of rape, physical abuse and incest.
- On average, South Africans will drink approximately 20.1 litres of alcohol each year, which is equivalent to 196 six packs of beer, 62 bottles of spirits and 220 bottles of wine.
- Approximately 37% of South African citizens drink from early Friday afternoon right up to Monday morning, staying drunk all weekend.
• Incidents involving driving under the influence of alcohol or drugs increased from 66,697 cases in 2011 to 69,441 cases in 2012, according to SAPS reports.

• In South Africa, there are roughly 80 treatment centres for abuse which could treat 20,000 clients per year, but the demand was nine to 15 times more.

• In Gauteng, 35% of arrestees said they used alcohol and/or other drugs to help them to commit the alleged offence.

• Levels of substance abuse and substance abuse-related problems are higher in Cape Town than in Johannesburg or Durban. The number of people arrested under the influence of mandrax in Cape Town is about ten percent higher than in Durban and Johannesburg.

• Cocaine (crack) is strongly associated with robbery, and mandrax with burglary.

• A total of 54% of arrestees under 20 years of age tested positive for any drug.

• Cocaine use was highest among the 20–30-year age group.

1.4 THE DRUG SITUATION IN SOUTH AFRICA
As can be seen from the above statistics, drug abuse and drug dependence is a major problem in South Africa. Statistics presented in a report to Parliament by the CDA in 2011 (PMG, 2011) show that the use of cannabis, cocaine and ‘tik’ (crystal methamphetamine) in South Africa is twice the global trend, and that South Africa is among the top 10 nations in alcohol consumption (September, 2013). Researchers predict that the pandemic could pose a bigger threat than that of AIDS to South African citizens (September, 2013) and that about 11% of the South African population (5.7 million people) will suffer from an addiction disorder in their lifetime (Myers et al, 2009).

In general, a person who is dependent on substances can’t predict or determine how much or when they will use drugs, but once they begin they can’t stop (Jafari and Shahidi, 2009). As reported in the literature, some of the many reasons given for using illicit drugs include experimenting, psychological problems (excessive worrying, anxiety, sadness, sexual dysfunction), peer pressure, family problems, substances that are easily available, users who were not aware of the dangers of using drugs, lack of recreational activities, poverty, unemployment, being surrounded by illegal substances and a low self-worth (Spooner, 1999; Farhadin asab et al, 2008; Ramlagan et al, 2010; Boyd, 2011; Allen et al, 2012; Geramian et al, 2012; Colder et al, 2013).

What is of concern is that South African studies have reported that the number of treatment admissions to rehabilitation centres have increased significantly over the years (Plüddemann et al, 2002; Ramlagan et al, 2010). Results indicate that most substance abusers were male with a lower prevalence among females, although substance prevalence for females could be much higher as females were not really
seen in rehabilitation centres (Ramlagan, et al, 2010). The Ramlagan et al (2010) study also reported that there was a steady increase in treatment demand for young people (below 20 years) as the age of initiation of substance abuse, such as glue and nyaope, was reported to be as early as 9 years old, but it is mainly males between the ages of 13 and 35 that are caught in the grip of nyaope (South African Broadcasting Corporation [SABC], 2013).

Treatment for clients in rehabilitation centres continue to be a challenge as dropout rates between 2% to 40% and higher are seen, with the variations being explained by the type of facility (in- or outpatient), facility location (e.g. big city or small town) and the substance that is abused (Ramlagan et al, 2010). This is despite the development of norms and standards for in-patient treatment centres and the steps that have been taken to institute protocols for managing the detoxification of patients at secondary hospitals in several provinces of South Africa (Parry, 2005).

1.5 METHOD OF DRUG USE AND DRUG EFFECTS
The majority of drugs are smoked; some, like Ecstasy, are also swallowed and cocaine is snorted. The method used to inject seems fairly standard. Some of the drugs that are injected are first boiled before being injected by “flushing”, where the blood is drawn back into the syringe a few times in order to mix the drugs with blood and then the drug is injected into the vein (Myers and Fakier, 2007).

For any drug, the amount taken will determine its effect on the user where a small amount acts as a stimulant, a little bit more acts as a sedative and large doses can lead to an overdose which can kill the user (Foundation of a Drug -free World [FDFW], 2012). It is important to remember that using drugs directly affects the mind as the thinking patterns of the brain are altered, which in turn can distort the user’s perception of what is happening around him or her. As a result, the user’s actions may seem odd, irrational, inappropriate and even destructive for a sober person (FDFW, 2012).

The general positive effects that users experience after using drugs are relaxed, calm, carefree, nice, happy and free feelings (Myers and Fakier, 2007). While the general negative effects include feelings of paranoia, aggressiveness, restlessness, feeling drowsy and being unable to sleep (Myers and Fakier, 2007).

1.6 WHY PEOPLE USE DRUGS
It is a well-known fact that drugs used appropriately as prescribed by medical personnel can provide relief from physical problems (e.g. pain-killers for those that are terminally ill) or it can be used for the
control of mental problems like schizophrenia and depression. Even alcohol used in moderation add to the personal enjoyment of the occasion, but when used to the point of abuse can lead to grim consequences for the individual, the family and society as a whole (Sheldon, 2013).

As stated by Sheldon (2013), due to the fact that people differ greatly from one another the motivations for drug use also vary within a society and with individuals due to the complexity of human motivation that is associated with any behaviour. Also, a person’s motivations for the use or abuse of drugs change as a person ages, takes on different social roles, experiences different degrees of involvement with drugs, and how they cope in dealing with stress. Thus the reason why a person is using drugs is related to the way the complex society he/she is living in is organized, perceived and experienced by the individual (Sheldon, 2013).

Unfortunately, many people who start using drugs often “buy into a lifestyle” as many addicts will confess that they tried it for the first time for fun, to impress others or to get accepted in a social group (McEachran, 2013). While others try out drugs in order to help them suppress some bad experience or guilty conscience, many resort to violent crimes such as stealing from their family homes, their neighbours and the community in order to support their habits.

Van Zyl (2013) published an article describing and interpreting the reasons for drug use in South Africa based on Bronfenbrenner’s ecological model (Bronfenbrenner, 1993). As effective substance abuse prevention and intervention programmes require theory and empirical evidence to base their programme and policy decisions on, this nyaope study conducted in Gauteng also made use of Bronfenbrenner’s ecological model as a theoretical framework to describe the factors/ determinants influencing drug use in more detail (Chapter 2). Bronfenbrenner’s ecological model provides insight into the effects of the individual, family, community and larger societal level systems on individuals and families where drug use is a problem (Maring and Braun, 2005).

From the literature there is evidence that the frequent and heavy use of alcohol, tobacco and cannabis precede as well as increase the risk of subsequent use of other illicit drugs such as cocaine and heroin, especially among younger age groups (Fergusson et al, 2008). This progression of substance use is known as “the gateway effect” (Myers et al, 2011) as the use of tobacco, alcohol and cannabis are seen as gateway behaviours which precede the use of “hard” substances and substantially increase the risk of becoming a substance abuser (Botvin et al, 1984).
Statistics from ELIM clinic for the period April 2011–March 2012 have shown a significant pattern where 57.23% of Black patients treated were nyaope users of which 51.06% were treated for the first time and were in the 18 to 25 years age category (Augustyn and van Niekerk, 2012).

1.7 THE ROLE OF PUBLIC HEALTH THEORIES/ MODELS RELATED TO DRUG USE AND ABUSE
As the drug user’s choices and behaviours are influenced by many factors, including biology, physical and social environments and events they experience in their everyday life, the development of an effective alcohol and drug abuse prevention strategy becomes a challenge.

A public health approach, based on health behaviour theories and models, could be used as a conceptual framework in the development of prevention strategies as the models permit assessments of prevention approaches and generalization from one set of circumstances to another (Johnson et al, 1988).

Based on what is known from epidemiological studies, knowledge about the host (individual who is using the substances), the agent (the substance in this case) and the environment in which the action is taking place, and the interaction between these three factors, is necessary for any prevention approach. But it is also important to know what the influence of the cognition-related factors, such as social norms or beliefs, are for predicting intention and the consequent behaviour, together with certain psycho-social factors, such as attitude, subjective norm and perceived behavioural control, is in determining the likelihood of adopting or rejecting healthy behaviour (Bashiran et al, 2012).

Theoretical-based research of these psychosocial factors, which explain the processes, causes and changes in human behaviour, could be used as a guide to the development of successful treatment plans (Morris et al, 2012). There are several ways in which human behaviour is conceptualised and defined. There are the theories that focus on the individual suggesting that the behaviour is the outcome of competing influences balanced and decided upon by the individual with a lesser impact by external factors (Morris et al, 2012). Other behaviour theories move away from the individual to focus either on the behaviour itself or the relationships between the behaviour, individuals and the social and physical environments in which they occur (Morris et al, 2012).

Some of the theories related to drug use/abuse that have been described in the literature are:
Theory of reasoned action: This theory emphasizes the relationship between the beliefs, attitudes and behaviours of the drug user. It has been demonstrated that substance or drug abuse is influenced by the knowledge and attitude towards the drugs and in order to change a behaviour, the knowledge and attitude towards the behaviour should be modified (Geramian et al, 2012).

Transtheoretical model of change: This model is a framework that describes behaviour change through three major constructs, namely: The Stages of Change, the Levels of Change and the Processes of Change (Connor et al, 2009).

When applying the Stages of Change to drug abuse and dependence, the five stages are:

1. Pre-contemplation: the individual does not recognize problems arising from drug use and is not considering change,
2. Contemplation: the individual recognizes problems arising from drug use and is considering change but remains indecisive,
3. Preparation: the individual plans to change behaviour soon,
4. Action: the individual makes an obvious behaviour change (e.g., stops using drugs or enters drug treatment), and
5. Maintenance: the individual works to prevent relapse and to consolidate the steps that were taken during the Action stage (Connor et al, 2009).

The construct Levels of Change, i.e. Symptomatic/Situational, Maladaptive, Interpersonal Conflicts, Family Systems Conflicts, and Intrapersonal, can be used as a framework to identify the problem areas and the number and severity of problems that individuals experience, at any of the levels or multiple of levels, when they are attempting to initiate behaviour change (Connor et al, 2009).

The construct, the Processes of Change, facilitates the movement through the stages from Pre-contemplation to Contemplation. There are four types: cognitive, emotional, behavioural and environmental (Connor et al, 2009). Consciousness Raising presents the cognitive process of acquiring information about the problem while Dramatic Relief is the emotional response to problem recognition or current behaviour, i.e. the trigger that prompts people to acknowledge their problem behaviour and its impact on those around them. Movement to the Preparation and Action stages tends to be a function of behavioural and environmental processes (Connor et al, 2009).
The Theory of Planned Behaviour (TPB): According to the TPB (Ajzen, 1991) a given behaviour, e.g. treatment seeking for drug abuse or treatment utilization (i.e. attending a rehabilitation programme), is preceded and predicted by one's intentions, which can be approximated by perceived need, assuming that perceived need is a component of intention to seek treatment (Booth et al, 2014). The intentions in turn are preceded by three distinct types of beliefs namely:

1. Attitudes and beliefs about the behaviour and its consequences,
2. Beliefs about the social norms or perceived norms surrounding the behaviour (e.g. stigma), and
3. Beliefs about the individual's personal ability to engage in the behaviour and his/her perceived control over the behaviour (Booth et al, 2014).

The TPB focuses specifically on the connection between the behavioural intentions and the behaviours themselves taking into consideration the importance of perceived control (Booth et al, 2014).

Social cognitive theory: One such theory that has been accepted as an explanatory model of health behaviour is the social cognitive theory of Bandura (Bandura, 1971) which suggests that behaviour is due to the interaction between an individual, the reinforcement (which could be both a reward or punishment) and the environment. An environment that is providing people with easy access to alcohol and drugs can be promoting substance abuse, while on the other hand an environment that controls access introduces an element of constraint (Botvin et al, 1995).

The status of parental social support, religiosity and locus of control (LOC) on substance use and abuse are recognized as predictive factors in the onset and continuous use of substances among adolescents (Farhadinasab et al, 2008). As a psychological variable, LOC evolved from Bandura’s Social Learning Theory (Bandura, 1971) which suggests that observed and imitated behaviours are either reinforced through reward or extinguished through punishment (Halpert and Hill, 2011). The LOC orientation, which can be either internal or external, refers to the individual’s beliefs regarding the relationships between action and outcome, and this explains how people actively deal with difficult circumstances in their lives. Individuals with a higher internal LOC orientation believe and expect that they will determine their own future because of their own actions, i.e. they are actively in control of what happens to them, while those with a higher external LOC orientation do not expect to have any control or influence over their future and lives, believing that the outcome is a result of external or impersonal forces such as luck, prayer, fate or powerful others (Singh and Singh, 2011).

When applied to drug addiction, LOC can be measured by forcing participants to choose between two general statements that are testing their subjective perceptions of control in a drug related context. As
an example: (a) ‘Addiction is for life: once contracted, it will never go away, no matter what you do’ and (b) ‘Successful recovery from addiction is possible but it is hard work’. It is expected that the person with a higher internal LOC will rather choose statement (b) while the one with a higher external LOC orientation will choose (a) as data from the literature has shown that drug-dependent individuals have a more internal sense of control in terms of addiction recovery than non-dependent individuals (Ersche et al, 2012).

Drug abuse studies show that higher internal LOC orientation is also associated with more positive outcomes for those clients who use and abuse drugs (Hall, 2001; Jafari and Shahidi, 2009; Ersche et al, 2012; Kao et al, 2014). The benefits of a high internal LOC orientation are that if the individual believes he/she is in control of his/her own future, a person is more motivated to take action, to engage in behaviours that will improve their lives and are willing to make sacrifices, as ultimately they know that they will be rewarded (Drug and Alcohol Rehab Asia [DARA], 2013). In general, addicts have a high external LOC orientation as most of the time they are blaming ‘others’ like family, friends, work, society, politics and bad luck for the problems they encounter in their lives, oblivious of the fact that they do have control over what happens in their lives. So until the drug addict with a high external LOC orientation understands that they can take charge of their destiny, they will continue with the downward spiral into addiction and rehabilitation failure (DARA, 2013).

1.8 STUDY PROBLEM
In South Africa, nyaope addiction is one of the most significant health and social problems affecting the nation as a whole. Due to large numbers of addicts, limited understanding of the drug, its composition and effect on the user, rehabilitation services are experiencing countless challenges in dealing with this epidemic. As LOC is a recognized predictive factor in the onset of substance use (Farhadinasab et al, 2008), knowledge of how LOC affects the clients admitted to the rehabilitation centres could assist in the planning of prevention programmes to reduce substance abuse and to change relapse among drug users into treatment success. Furthermore, by distinguishing between the personality characteristics (external LOC orientation and internal LOC orientation) of the client in the rehabilitation centre, rehabilitation programmes could be aligned to suit the personality (Horvath, 2011) leading to a better chance of success of recovery with fewer cases of re-admission. It therefore becomes critical to understand the role of the predictive factor LOC in substance abuse as drug abuse often develops into a chronic, relapsing condition that is resistant to treatment (Hall, 2001).
1.9 AIM / OBJECTIVE
The aim of this study is to explore and describe the role and extent to which the drug user’s LOC influences the use of nyaope in Gauteng.

1.10 RESEARCH QUESTION
This study would like to answer the question: What is the role and extent of the drug user’s LOC in the use of nyaope in Gauteng?
CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION
According to the United Nations Office of National Drug Control Policy (UNODC) (2012), it is estimated that approximately 230 million people, or 5% of the world’s adult population, have used an illicit drug at least once during 2010, with a projection of 27 million individuals with drug problems globally. Data from the South African Stress and Health Study (SASH) indicate a high lifetime prevalence (13.3%) and early onset (21 years) of alcohol and other drug (AOD) use disorders (Herman et al, 2009). This is an indication that AOD use is a global public health problem (Kalula and Nyabadza, 2012; Sorsdahl et al, 2014) with psychological health issues (Germamian et al, 2012), which has a negative impact on the health of the user, the immediate environment of the user and the global society (Fabricius et al, 2007).

When used appropriately, AOD, like prescription medication, are able to provide relief from physical and mental problems; when used in moderation, AOD, like alcohol, can enhance the enjoyment of social interactions and heighten pleasurable sensations. But when AOD are used to the point of abuse, the individual, family and society all feel the consequences (directly or indirectly) as the influence of this burden reaches across social, racial, cultural, language, religious and gender barriers (SMART, 2008).

South Africa as a country can’t afford the health and socio-economic burden that substance abuse has placed on the society. These costs are on the increase (Visser and Routledge, 2007), as can be seen by the greater demand for substance-abuse treatment services for adolescents reported by the South African Community Epidemiology Network on Drug Use (SACENDU) (Parry et al, 2002b). It is thus of the utmost importance to recognize the need for a multi-sectorial, holistic approach in order to address substance abuse problems in this country (Fabricius et al, 2007).

2.2 MEASURES OF DRUG USE
As most of the drugs of abuse are illegal, accurate and complete data is lacking regarding the true incidence and prevalence of illegal drug use in South Africa. Also, the quantification of the implications of drug use, especially those related to disease burden, is deficient, and the demands for healthcare and risky sexual behaviour are complex and information minimal (Kalula and Nyabadza, 2012). Furthermore, social stigmatisation and issues of legality often cause substance use/abuse to be practised in privacy. The condition, therefore, does not lend itself to easy measuring (van Zyl et al, 2012). This is further complicated by the difficulties with the existing measures of drug use.
Some of the problems related to the current measures of drug use include:

**Lack of standardization:** There are various operational measures of AOD use as each survey makes use of its own set of operational definitions. This is due to the fact that questions related to drug use differ mainly in (1) time period covered, (2) frequency categories presented to respondents, and (3) number of occasions the substance was used versus the number of units of the substance that have been used (Aspler, 1978). The result is that it is not possible to compare data between different surveys as researcher’s definitions are different. As an example: one researcher’s definition of ‘experimental use’ might be the same as another’s ‘moderate use’.

**Absence of clear definitions of basic concepts:** According to Aspler (1978), the most fundamental concepts in the drug/alcohol fields, such as drug use, drug dependence, drug abuse, loss of control, etc., are very ambiguous. If there are no clear definitions of what constitutes drug use, there is a possibility that there will be differences between the operational definitions of surveys, making it difficult to compare results.

**Obstacles to accurate measurement:** It is difficult to determine the frequency and quantity of drugs used as drugs that were purchased on the street are known to be impure as they are mixed with various other substances, making it impossible to know the actual contents without obtaining a chemical analysis. Even in those cases where the amount and type of drug contained in each unit is known, the drug’s effects may cloud the user’s memory of the precise quantity ingested (Aspler, 1978). The implication is that researchers have to rely solely on the memory of the drug user, even sometimes asking for a detailed accounting of drug use during their first year of use, which might be many years in the past (Aspler, 1978).

**Physical characteristics:** When looking for a drug user’s reactions after taking drugs, it is important to realise that each psychoactive drug displays unique and distinct biological changes (Ryan, 1997) as an individual’s physical characteristics, such as body weight and rate of metabolism, influence how they will react to a specific drug (Aspler, 1978). Also, for any drug, the changes are dependent on the level of the acute dose, the long-term pattern of drug use and whether the concentrations in the brain and body are rising or falling (Ryan, 1997). Due to the multiple influences of these factors on the user, the reactions will be different for different people.

**Socially acceptable answers:** Respondents have the tendency to answer questions that they may perceive as threatening, invasive—or causing emotional discomfort in a manner that will be viewed as favorable by others (Wyse, 2011). Due to human nature, there is generally an over-reporting of good
behaviour and an under-reporting of bad or undesirable behaviour. As the possession of drugs is a criminal offence, one can expect inconsistencies arising from under-reporting if data is collected by standard methods (e.g. household surveys or case findings) (Kalula and Nyabadza, 2012) due to fear of prosecution. This social desirability bias poses a serious problem to the outcome of any study, especially AOD use, as it will interfere with the interpretation of the results.

**Lack of drug-use surveys:** In South Africa, it is very difficult to determine the accurate prevalence of drug abuse as the most comprehensive and recent information is gathered from parts of surveys designed to gather other information, but which include a component with questions about drug use, with the South African Police Service (SAPS) providing information about arrests and incarcerations (Fellingham et al, 2012).

**Drug cultivation and production:** Globally, but in developing countries in particular, reliable data on the cultivation and production of illicit drugs is lacking (DSD, 2013). As reported by UNODC (2009), illicit drug “markets are clandestine and tracking changes requires the use of a variety of estimation techniques. Data is sparse, particularly in the developing world, and the level of uncertainty in many matters is high”.

**Socio-demographic and regional variation in drug use/abuse:** Literature related to admissions to substance abuse treatment centres as well as reviews of the nature and extent of AOD use/abuse in South Africa have consistently shown that substance use/abuse trends vary over time and also across regions and socio-demographic sectors, influencing the measure of AOD use/abuse (Peltzer et al, 2010; Dada et al, 2012).

**Personality variables (concept of control):** As noted by Aspler (1978), drug use involves much more than simply knowing the actual amount and frequency of the substance ingested. Another important aspect of substance use is the way that individuals actually control their use of substances, which is dependent on personality variables. Studies on alcohol use (Goldstein, 1976; Sugarman and Schneider, 1976) have shown that alcoholics tend to rely more on external cues in the environment than on internal cues in making judgments than non-alcoholics. The influence of personality variables have also been described by Rotter’s LOC test (See later section 2.9.5 Section iii which is a detailed discussion of LOC orientation) which has demonstrated that alcoholics tend to have a high score on external LOC orientation, which implies that they are having the feeling that they are controlled by outside events. Work on both field dependency and LOC orientation suggests that alcoholics see the
world and react to the world differently from non-alcoholics vis a vis control over their lives (Aspler, 1978).

2.3 HISTORY OF ADDICTION
Drug use and abuse is as old as the history of mankind. Human beings have always had a desire to eat or drink substances that make them feel relaxed, stimulated or euphoric (Forcon, 2004). According to Crocq (2007), historically psychoactive substances have been used for:

Religious ceremonies: The mushroom *Amanita muscaria*, (red mushroom with white spots) commonly known as fly agaric, has been at the centre of religious rituals in Central Asia for at least 4000 years and has a religious significance in ancient India, with travellers recording its use as late as the 18th century in North Eastern Siberia. These mushrooms were ingested in order to induce a state of dissociative trance causing hallucinations.

Medicinal purposes: The earliest written records describe the use of opium as medication. At the end of the third millennium before Christ (BC), the Sumerians cultivated poppies and isolated opium from the seed capsules which they used as a substance to bring them “joy” (antidepressant) (International Network of People who Use Drugs [INPUD], 2010). Also, of the oldest medical documents, the Ebers papyrus (1500 BC) describes a remedy to prevent excessive crying in children by using grains of the poppy plant (Crocq, 2007).

Recreational use: As a form of social interaction some potentially addictive drugs, such as alcohol, nicotine and caffeine, are used by a significant proportion of the general “normal” population on a regular basis (Crocq, 2007). So far, the oldest vines that were carbon dated were found in Georgia and belong to the period from 7000 to 5000 BC (Johnson, 1989). At the end of the 15th Century, coffee was largely used throughout the Islamic world and tea plants were already being harvested in China in the 3rd century BC (Crocq, 2007).

Dos Santos et al (2011) claim that the use of psychoactive substances for recreational purposes is becoming increasingly prevalent in the younger generations and attribute this fact to the socio-cultural pressures that are associated with a transition to modernization in predominantly traditionalist African communities.
2.4 DRUG ABUSE, DRUG DEPENDENCE, DRUG ADDICTION AND DRUG TOLERANCE

It is important to understand the four different terms so as to correctly identify the problem behaviour of the drug user as often the terms drug dependence and drug addiction are used interchangeably, though they have separate and distinct meanings (GenPsych, 2014; Tracy, 2014).

**Tolerance:** When starting to use a drug, typically a small amount of the drug is able to give the user the pleasurable effects or "high." But with time the same amount of drug is no longer able to produce the desired effects and the user has to consume a bigger amount of the drug to attain the same high. This effect is known as tolerance (Tracy, 2014).

**Drug abuse:** This is more related to the pattern of drug use, i.e. where a substance is misused in a manner that does not conform to the social norms and the effects that the drugs are having on a user's life, implying that a person is persistently or sporadically using substances in a manner that causes negative consequences (Weich et al, 2008). Though drug abuse takes place over time where the user has an intense desire to use increasing amounts of a particular drug (Dryden-Edwards, 2014a), as per definition drug abuse specifically requires that the drugs have a negative effect on the user's life over a 12-month period (Tracy, 2014). It is therefore possible that one can abuse drugs without necessarily being addicted to drugs (GenPsych, 2014; Tracy 2014).

**Drug addiction** can be described as a behavioural syndrome where obtaining and using of the drug is dominating the user's motivation (Addictionscience, 2009). With addiction, the drug user has developed a tolerance to the drug and has to increase the amount of drug used in order to get the same effect (high) and is experiencing withdrawal symptoms when abstinent (Tracy, 2014). Included in the definition of drug addiction is the use of drugs as well as the psychological and physiological effects that the drug has on the body of the user (Addictionscience, 2009; GenPsych, 2014).

**Drug dependence** refers to a state where an individual is dependent upon the drug for normal physiological functioning, i.e. there is a physical need for the drug, and when not using the drug withdrawal reactions such as vomiting, diarrhoea and sweating can be experienced, which constitutes the only evidence for dependence (Addictionscience, 2009). Disturbances in the psychological functioning, such as inability to concentrate, anxiety, depression and the resulting symptoms, are also indications of psychological dependence on drug use (Addictionscience, 2009). In the long run, drug dependence results in physical harm and behaviour problems.
As there is virtually no difference between dependency and addiction, drug abuse and dependence should thus be regarded as a disease, not a character defect, and a person being treated for this condition should be given the same respect as a person with any other medical condition (Dryden-Edwards, 2014a).

### 2.5 DRUGS, BRAINS AND BEHAVIOUR

Society’s general responses to drug abuse is treating the situation as the failure of a person who is morally flawed and lacking in willpower, and that a user could stop using drugs simply by choosing to change their behaviour (Drugabuse, 2015), rather than seeing the condition as a health problem. In response to this view, the emphasis is therefore rather of a punitive nature than preventative.

But since science began to study addictive behavior in the 1930s (National Institute of Drug Addiction [NIDA], 2010), the views and responses to drug abuse have changed dramatically. It is now acknowledged that drug addiction is a complex disease, and that quitting takes more than good intentions or a strong will as quitting is difficult, even for those who are ready to do so, due to the way the drugs are changing the structure of the brain and how it works (NIDA, 2010). The scientific understanding of drug addiction is enabling professionals to respond effectively to the problem by developing prevention and treatment approaches taking into consideration the fact that addiction is a disease that affects both the brain and behaviour (NIDA, 2010).

According to Drugabuse (2015), there are at least two ways that drugs can cause a disruption in the brain of a user:

**By imitating the brain’s natural chemical messengers:** The chemical structures of drugs, such as marijuana and heroin, (both contents of nyaope), mimics that of a natural neurotransmitter (chemical messengers) which are naturally produced by the brain (NIDA, 2010; Drugabuse 2015). This similarity in chemical composition allows the drugs to “fool” the brain’s receptors and activate nerve cells to send abnormal messages affecting the brain’s communication system by disrupting the way nerve cells normally send, receive and process information (Medicinenet, 2014; Drugabuse, 2015). It is the inhibitory functions of the brain that are particularly impaired when taking these drugs, with the result that the user finds it difficult to stop from acting on impulses that the brain would otherwise delay or prevent. This disinhibition of the user can result in him/her engaging in aggressive, sexual, criminal or other activities that can have devastating consequences for the addicted person as well as those around him or her (Medicinenet, 2014).
By overstimulating the “reward circuit” of the brain: Most drugs of abuse directly or indirectly target the brain’s reward system by releasing abnormally large amounts of natural neurotransmitters (mainly dopamine) (NIDA, 2010) or prevent the normal recycling of these brain chemicals, which is needed to shut off the signalling between neurons (Drugabuse, 2015). The result is the oversupply of dopamine, the neurotransmitter that controls movement, emotion, cognition, motivation and feelings of pleasure (NIDA, 2010).

The overstimulation of this system, which rewards our natural behaviours, produces the euphoric effects experienced by the users of psychoactive drugs (NIDA, 2010). The overstimulation of this pleasure or reward system sets in motion a reinforcing pattern that “teaches” people to repeat the life-sustaining activities by association (NIDA, 2010). Because drugs of abuse stimulate the same circuit, we learn to abuse drugs in the same way (NIDA, 2010). The brain adapts to the surges in dopamine by producing less dopamine or by reducing the number of dopamine receptors in the reward circuit, resulting in a reduction in the abuser’s ability to enjoy not only the drugs but also other events in life that previously brought pleasure (Drugabuse, 2015). This decrease compels the addicted person to keep on using drugs in an attempt to bring the dopamine function back to normal, but now larger amounts of the drug are required to achieve the same dopamine high (NIDA, 2010; Drugabuse, 2015). This effect is also known as tolerance.

2.6 WHY PEOPLE ARE TAKING DRUGS
There are a variety of reasons why people are taking drugs but in general the reasons are:

To feel good: An intense feeling of pleasure or euphoria is produced by most drugs. After the initial sensation, the effects that follow are dependent on the type of drug that was used. As an example, after using a stimulant such as cocaine the initial high feeling is followed by feelings of power, self-confidence and increased energy, while using an opiate such as heroin results in feelings of relaxation and satisfaction (NIDA, 2010).

To feel better: For people who suffer from social anxiety, stress-related disorders and depression, using drugs can help them to alleviate the feelings of distress (NIDA, 2010).

To do better: For some individuals there is pressure to chemically enhance their athletic performance or improve their intellectual ability, which can act as a reason to start using drugs (NIDA, 2010).

Curiosity and “because others are doing it”: Due to the strong influence of peer pressure, adolescents are particularly vulnerable to start experimenting and using drugs (NIDA, 2010).
2.7 CLASSIFICATION OF DRUGS
In South Africa, the most common street drugs are classified according to the effect that they have on the user’s brain. There are three main classes: uppers (stimulants), downers (depressants) and hallucinogens (which influences the user’s perception of reality) (Health 24, 2013), and a fourth group, the designer drugs, with some drugs falling into more than one class. Some of the most common drugs will be discussed in more detail under their specific classifications.

2.7.1 UPPERS (STIMULANTS)
Examples of drugs that are regarded as “Uppers” include cocaine, crack cocaine, crystal meth or methamphetamine, amphetamines, ephedrine, ecstasy, speed and khat (SABC, 2011; van Loggerenber, 2012; Health 24, 2013). All these drugs are designed to make the user feel great by generally making them feel alive, dynamic, and energized by stimulating the brain and increasing the heart rate (Health 24, 2013). A user can also feel anxious, nervous and paranoid depending on the individual response to the drug. All these drugs put a strain on the heart and long-term use destroys the nervous system, suppresses the appetite and causes sleeplessness (SABC, 2011). The result is that the user has to take a “downer” in order to feel better once the withdrawal symptoms set in.

Examples of Uppers include:

i) Cocaine
Cocaine (Figure 2.1), which is the powder or crystal form of the drug that is extracted from coca leaves, was originally developed as a painkiller (Helmenstine, 2014). The powder is usually mixed with other substances such as corn starch, talcum powder and/or sugar, or other drugs such as the local anaesthetic procaine or amphetamines (FDFW, 2012) to give it more substance.

Figure 2.1: Cocaine (Source: Helmenstine, 2014)
Cocaine is absorbed into the bloodstream through the nasal tissues by sniffing and it can also be ingested or rubbed into the gums. It can be inhaled as smoke or vapour which also speeds up the absorption and is less risky than an injection as an injection could easily lead to an overdose due to the rapid absorption of cocaine into the bloodstream.

Cocaine is one of the most dangerous drugs known to man as it physically stimulates receptors in the brain that in turn create a euphoria to which users quickly develop a tolerance making it almost impossible to become free of its physical and mental grip (FDFW, 2012). Cocaine use can lead to respiratory failure, stroke, cerebral haemorrhage and heart attacks, while children of cocaine-addicted mothers are born as addicts themselves with possible birth defects and many other problems (FDFW, 2012).

According to the CDA, the abuse rate of cocaine increased in South Africa by 20% between 2006 and 2008 (Thomson, 2013) resulting in an increase in the number of people seeking treatment for cocaine from 1.5% in 1996 to 17.5% in 2008 (Thomson, 2013). Shisana et al (2005) conducted a national survey among persons 15 years and older and found that 0.3% of participants reported lifetime use of cocaine, while the Youth Risk Behaviour Survey (YRBS) that was conducted among students in grades 8–11 reported a lifetime prevalence of 6.4% (Reddy et al, 2003).

**ii) Crystal Methamphetamine**

Crystal methamphetamine or crystal meth, with nick names such as meth, crank, chalk or speed, and street names such as ice, glass, or Tik, (Figure 2.2) is just one form of the synthetic drug methamphetamine. The drug is commonly manufactured in illegal laboratories where various forms of amphetamine are mixed with other chemicals such as battery acid, drain cleaner, lantern fuel and antifreeze to boost its potency (FDFW, 2012). This odourless, bitter-tasting, white crystalline powder, which resembles ice, is in the same class as cocaine and is commonly used as a “club drug” while partying in night clubs or at rave parties (Healthy Empowered Authentic Living [HEAL], 2013). The powder dissolves easily in water or alcohol.

![Figure 2.2: Crystal methamphetamine](CrystalMethAddiction.org, 2013)
In South Africa, Tik is widely available, relatively cheap - it costs between R30 and R40/straw (Gauteng Province Community Safety [GPCS], 2013) and can also be bought compressed into a pill form. Tik can be taken by snorting, injection and sometimes orally (HEAL, 2013), but is mostly smoked by placing the powder in a glass pipe called a “Tik lolly” (GPCS, 2013). The drug’s effects generally last from 6 to 8 hours (sometimes up to 24 hours) and create a false sense of happiness and well-being, and give the user a strong feeling of confidence, being hyperactive and full of energy (HEAL, 2013). The increased sexual risk behaviour that is associated with the use of this drug is increasing the likelihood of exposure to sexual transmitted infections (STIs) and HIV exposure (Plüddemann and Parry, 2012). The use of Crystal meth is associated with serious health conditions, including memory loss, aggression, psychotic behaviour, depression, potential heart and brain damage, and weight loss (Plüddemann and Parry, 2012). The drug is highly addictive creating a dependence that can only be relieved by taking more of the drug while systematically burning the body’s resources and destroying the body (HEAL, 2013).

Tik abuse is found across South Africa, but the highest incidence and prevalence is experienced on the Cape Flats (Plüddemann and Parry, 2012). Associated with Tik is the gangsterism and increased rates of crime; and its use has led to vicious gang wars as rival groups try to control the Tik market (GPCS, 2013). Figures from various surveys that were conducted among high school learners indicated that the lifetime self-reported use of the drug in the Western Cape ranged between 2% and 12%, with estimates for most of the surveys between 9% and 12% (Plüddemann and Parry, 2012). A study by Plüddemann et al (2013) reported that there was a significant decline of Tik use amongst school children with a reported lifetime prevalence of only 2%, and that the estimated proportion of youth admissions to inpatient substance abuse treatment centres, primarily owing to methamphetamine, declined from 21% in 2005 - 2006 to 6% in 2009 - 2010 (Morojele et al, 2013). This decline might be the result from changes in the government’s policy and legislation regarding the regulation of precursor chemicals as well as an increase in law enforcement (Plüddemann et al, 2013).

2.7.2 DOWNERS (SUPPRESSANTS)
Examples of drugs that are regarded as “Downers” are alcohol, dagga, the opioid group including heroin and mandrax (SABC, 2011; van Loggerenberg, 2012), and all other drugs that cause the user to relax as they suppress or delay certain brain functions (Health 24, 2013). As the long-term use of “Downers” causes lethargy, it becomes difficult for the user to function as a member of society (SABC, 2011) and taking too much of the downer also causes the shutdown of the body systems of the user, leading to death.
Examples of Downers include:

i) Alcohol
In South Africa, alcohol (Figure 2.3) is the dominant substance of abuse (Parry et al, 2002a), and an estimated two million people could be classified as problem drinkers, with the socio-economic cost of alcohol abuse an estimated R130 billion per year (Eberlein, 2011). It is reckoned that South Africans consume in excess of 5 billion litres of alcohol annually, which equates to 9-10 litres of pure alcohol per person; this figure is likely to be higher still if sorghum beer is included (Seggie, 2012). According to a WHO report released in 2011 (WHO, 2011), these figures are among the highest per capita consumption rates in the world, and are continuing to rise.

Figure 2.3: Alcohol abuse (Source: Bachelor of Management Studies [BMS], 2014)

Within treatment centres, alcohol was cited as the second most common primary substance of abuse after cannabis, but amongst adolescents of both genders, excessive drinking was the most common form of substance abuse (Visser and Routledge, 2007). The highest rates of weekly drinking was reported amongst White adolescents (32%), followed by Indian (26%) and African (23%) respondents, while Coloureds had the lowest rates (19%) (Reddy et al, 2003). Alcoholism among youth is a particular concern, given that at least half of South Africa’s population are categorised as young people, i.e. under 35.1 years of age (Seggie, 2012).

ii) Marijuana/ Hashish/ Cannabis
The dried flowers, seeds and leaves of the Indian hemp plant are known as marijuana; hashish is made from the resins of the plant while cannabis describes any of the drugs that come from the plant (FDFW, 2012). On the street this hallucinogenic drug is also referred to as: dagga, dope, grass, pot and weed to name but a few slang terms. Marijuana is usually smoked as a joint or a nail (Figure 2.4); it can also be taken as a tea or mixed with food, or smoked through a water pipe called a bong (HEAL, 2013).
In the first hour of smoking marijuana, a user’s risk of a heart attack could increase fivefold as marijuana speeds up the heart rate (HEAL, 2013). Loss of coordination and distortions in the sense of time, vision and hearing, sleepiness, reddening of the eyes, increased appetite and relaxed muscles are some of the short-term effects. As the typical user inhales the smoke, which contains 50% to 70% more cancer-causing substances than tobacco smoke (FDFW, 2012), damage is caused to the lungs and the heart, leading to bronchitis and inflammation of the respiratory tract (HEAL, 2013). Marijuana smokers have poorer memories and diminished mental functions than non-users (FDFW, 2012).

The nationwide survey that was carried out by Shisana et al (2005) reported that 2.3% of the urban population use cannabis, while in the rural areas the rate was 1%. Figures from the YRBS that was conducted in 2002 in South Africa (Reddy et al, 2003) indicate that 9% of school-age children use cannabis. South Africans addicted to cannabis account for 19.9 % of all patients undergoing treatment at drug rehabilitation centres (Thomson, 2013).

iii) Heroin
Heroin (like opium and morphine) (Figure 2.5), which is made from the resin of poppy plants, was manufactured as a treatment for tuberculosis and a remedy for morphine addiction (HEAL, 2013). The milky, sap-like opium is first removed from the pod of the poppy flower; this opium is then refined to make morphine, which is then further refined and diluted (cut) into different forms of heroin by the addition of other substances such as sugar, starch, acetaminophen (Paracetamol), procaine (a local anaesthetic drug) and quinine to increase bulk so dealers can sell more (People Magazine, 2013). The end-result is a product that can range from 10% to 70% heroin, with pure heroin very rarely sold on the streets.

If the various additives are not fully dissolved when injected, it can clog the blood vessels leading to the lungs, kidneys or brain resulting in infection or destruction of these vital organs (HEAL, 2013). As the
user never really knows the actual strength of the drug in the particular packet that was bought, there is a constant risk of an overdose (HEAL, 2013; Parry et al, 2007).

![Heroin Image](image)

**Figure 2.5: Heroin** (Source: Altucher, 2014)

This highly physically addictive drug (i.e. the body starts depending on the drug to function) is usually injected, snorted or smoked and enters the brain rapidly, resulting in the user reacting slowly, weakening their decision-making ability and making it difficult to remember things (Parry et al, 2007). Heroin quickly breaks down the immune system, which ultimately leads to death (HEAL, 2013).

In the past, there was a tendency for heroin users to be White, but trends indicate an increase in the proportion of Coloured and Black/African users with figures of 84%, 20% and 30% respectively for Cape Town, Gauteng and Mpumalanga (Plüddemann et al, 2006). Speculation is that the increase is due to the increased traffic on the “Maputo Corridor” (Maputo to Pretoria), which functions as a conduit for heroin coming from Tanzania via Maputo (Parry et al, 2007), as globally South Africa has one of the highest prevalence rates of heroin use (UNODC, 2004).

2.7.3 HALLUCINOGENS OR “ROUND AND ROUNDERS”

These drugs, such as lysergic acid diethylamide (LSD) and mescaline (SABC, 2011; van Loggerenberg, 2012), cause the user to experience powerful hallucinations or dreams - a “trip” in which the person’s reality is changed. Unfortunately, it is not possible to predict if the user is going to experience an enjoyable “good trip” or a “bad trip” which is a terrifying experience.

Examples of hallucinogens include:

i) LSD

Illegal laboratories are manufacturing a crystal form of LSD from lysergic acid, which is found in the ergot fungus that grows on rye and other grains and is one of the most potent, mood-changing chemicals. On the street LSD is sold in the form of small tablets (“microdots”), capsules or gelatine
squares (“window panes”), and is sometimes added to absorbent paper, which is then divided into small squares decorated with designs or cartoon characters (“loony toons”) (HEAL, 2013) (Figure 2.6). A typical LSD experience or “trip” can last for about 12 hours and some of the long-term effects reported include depression and a reduced ability to concentrate (HEAL, 2013).

Figure 2.6: LSD (Source: Wikia, no date)

2.7.4 DESIGNER DRUGS
Then there are also the designer drugs, which consist of illegally synthesised compounds that are similar to existing drugs, and are manufactured in an effort to find new markets and to circumvent the drug laws of countries (van Loggerenberg, 2012). Examples of designer drugs are: alpha methylfentanyl (known as “china white” on the heroin market), nyaope and drugs with a phenethylamine base – such as bromo-dragonfly (van Loggerenberg, 2012). A problem with the designer drugs is lack of standardization. Clients complain that they experience more negative reactions after use, which could be due to mixing with inferior substances or problems during the manufacturing process (Ramlagan et al, 2010).

Examples of designer drugs include:

i) Mandrax or methaqualone
The synthetic drug Mandrax, with the active ingredient Methaqualone, is made by mixing chemicals to produce a tablet (Figure 2.7). This highly addictive drug, which is mixed with dagga and is then smoked in a Dagga pipe (better known as “Bottle neck” or a “White pipe”), is still the drug of choice in many parts of South Africa, though it is being forced out of the market by drugs such as Crack Cocaine (Drug Aware, 2003). Originally Mandrax was a safe, non-dependent drug that was prescribed as a tablet for insomnia, high blood pressure and anxiety attacks.
The side-effects of Mandrax include: serious emotional problems, depression, drastic weight loss, headaches, stomach cramps, insomnia, epilepsy, aggression, toxic psychosis and inability to control body muscles which causes the Mandrax user to fall often (Drug Aware, 2003). The distinct yellow stained palms of the hands, which is due to the smoking of the “Bottle neck”, is a typical sign of a Mandrax user (Drug Aware, 2003).

ii) Ecstasy
Ecstasy is an amphetamine derivative, which means that it is a fully synthetic, artificially manufactured narcotic (Drug Aware, 2003). As these designer drugs are manufactured in backyard laboratories, they have never been tested or approved for human consumption, with literally hundreds of different types of tablets currently circulating in the South African market (Drug Aware, 2003) (Figure 2.8).

Repeated use of Ecstasy is also associated with sleep, mood and anxiety disturbances; tremors or twitches; and memory problems (FDFW, 2012). As ecstasy suppresses the natural alarm signals
(serotonin) given out by the body, a user runs the risk of going beyond his physical limitations and endurance. This drug, with its serious and dangerous side-effects, is prominent on the rave scene where large numbers of teenagers abuse it and, if mixed with alcohol, it can be deadly (FDFW, 2012).

iii) Nyaope
The use of heroin has increased in the past decade (Nyabadza and Hove-Musekwa, 2010) and, as of late 2000, entered the South African market, specifically the black townships under the guise of area specific street names (MCEachran, 2013). Heroin is mixed with a variety of substances and is called "Nyaope" in Pretoria, "Sugars" or "Whoonga" in Durban, "Ungah" in the Western Cape and "Pinch" in Mpumalanga (Plüddemann et al, 2006). Now, Nyaope, a Sotho word meaning “you are going nowhere,” (Hookins, 2014) has become the “drug of choice” among thousands of youth across South Africa. Gosh (2013) described the nyaope epidemic in South Africa as “worse than the current unemployment, HIV and AIDS crisis put together.”

According to the 2013 Gauteng Socio Economic Outlook and Review (Treasury, 2013), 51.4% of young people in Attridgeville (Pretoria) abuse drugs, with the most common substances being alcohol, cannabis and nyaope (Van Zuydam, 2013). Current research estimated that about 15% of South African youth are susceptible to drug abuse, with exposure to nyaope the highest (South African Government News Agency [SANEWS], 2013).

This cheap and effective drug cocktail (Figure 2.9), which is available for about R30 to R45 for one hit, by and large consists of 10-70% third grade heroin (Mahole 2014). It is estimated that a seasoned addict will smoke about four times a day (one in the morning, one at lunch time, one in the evening and one to go to sleep) which, at a cost of R120 per day, is 10 times the average amount a person lives on in a day in these poor areas (Hookins, 2014). Although the cost to buy nyaope can be regarded as low (when compared to other drugs), the fact that addicts need several doses a day makes it expensive for the user as most users are typically too poor to afford the drug out of their legal income. As with all other drug addicts, these adolescents often become involved in crime as most of the school children that use the drug are three times more likely to be involved in violent crimes (Tau, 2013). Their disorganized lives revolve around getting hold of the drug where they can't think rationally and forget who they are in terms of their values and beliefs as they lie, cheat, steal and turn to prostitution just to be able to get their next hit.

The exact ingredients that are sold as nyaope are difficult to pin point and the subject of many urban legends as the exact makeup varies amongst the dealers. Claims are that nyaope contains illicit substances such as marijuana, methamphetamine, and/or heroin (Grelotti et al, 2013); household
products such as detergents, bicarbonate of soda, pool cleaner and rat poison to make the “high” stronger and to last longer (Grelotti et al, 2013; MCEachran, 2013; Tau, 2013).

The addition of anti-retro virals (ARVs) (notably Efavirenz) (Grelotti et al, 2013; MCEachran, 2013), which is said to be what is giving the user the hallucogenic highs within a few minutes after smoking (MCEachran, 2013), is still controversial but there is published evidence that ARVs may have been used for recreational purposes in Soweto (Rough et al, 2014) and in KwaZulu-Natal (Grelotti et al, 2013). Chinouya et al (2014) reported that most HIV medicines have some side-effects with Efavirenz no exception. The hallucinations due to the side-effects of Efavirenz, resulting in the perceived feelings of “comfort” and “being high”, were reported as the reason for the use of some ARVs for recreation (Chinouya et al, 2014).

Efavirenz is used in first-line treatment of HIV in South Africa (National Department of Health of South Africa [NDoHSA], 2010), which has the largest ARV programme in the world with approximately 1.7 million people receiving treatment (Joint United Nations Programme on HIV and AIDS [UNAIDS], 2012). The addition of Efavirenz to nyaope is of great concern as the unconventional use of the prescribed ARVs may adversely impact on the health and safety of HIV-positive patients, as well as those who abuse ARVs, as HIV treatment default has the potential to generate ARV resistance (Grelotti et al, 2013). An additional problem is the claims that some nyaope addicts are even attempting to become HIV-positive in order to obtain ARVs, since ARVs are distributed to poor HIV patients free of charge in South Africa (Tranquillity Clinic, 2013).

The problem is that this variety of substances constitutes an unknown variable factor. Also, the fact that only a portion of what the nyaope user buys is actually heroin makes the danger of overdosing very easy, as the user doesn’t know how pure the product is.

Figure 2.9 Nyaope
The substance is sold as bags of white powder to which dagga is usually added and is smoked as a joint, cigarette-like roll (or Rizler) (Ntswane, 2013) or by inhaling the fumes after placing it on metal that is heated. The initial rush and euphoria of contentment and relaxation lasts for approximately four hours and users feel warm when cold, calm when angry and satisfied when hungry (Ntswane, 2013). But after 6 to 24 hours the distressing withdrawal symptoms set in, which include severe abdominal and back ache, sweating, chills, anxiety, insomnia, restlessness, depression, nausea, diarrhoea, a painful stomach, muscle cramps and a general feeling of being really ill (Ntswane, 2013). The only way to relieve the symptoms is by taking the next, stronger dose. This is due to the fact that the heroin in nyaope forces addicts to use increasingly stronger mixtures of the drug to get “high,” until they are physically heroin dependent (Tau, 2013). Due to the fact that once inhaled, nyaope quickly enters the bloodstream moving fast to the brain, triggering the feel good reaction, it has been claimed that by using nyaope once a person can get hooked, although the reactions depend on the individual (Matuntuta, 2014).

Users also report that, when using nyaope, they can go for days without eating, losing a lot of weight, which in turn weakens their immune system making them vulnerable to infections (Grelotti et al, 2013; Matuntuta 2014). Also, personal hygiene becomes lax (HEAL, 2013).

Some of the complications of the long-term use of heroin are the very serious decay of the body, like infections to the blood vessels and heart valves, brain damage similar to that seen in the early stages of Alzheimer’s disease as well as damage to other organs of the body, such as the kidneys, and liver damage and lung complications (South African Depression and Anxiety Group [SADAG], 2011; Ntswane, 2013). As the use of nyaope causes a reduction in heart and lung function, an accidental overdose can have fatal consequences (Tranquility Clinic, 2013). Further complications may be an increase in HIV infections (NIDA, 2010; SADAG, 2011; Grelotti et al, 2013) and the spread of hepatitis B and C (NIDA, 2010; Weich et al, 2013) due to the fact that users tend to share needles while they are “spiking”. Nyaope also contributes to the spread of tuberculosis (TB) when users that are infected with TB share a joint (Sowetan, 2015).

Due to the fact that heroin is mixed with other common and cheap substances, the price is more affordable and obtainable, thus adolescents are targeted within communities, with the typical nyaope user between the ages of 13 and 19 (Tau, 2013; GPCS, 2014). Adolescents have little money at their disposal but are eager to experience the sudden rush and euphoria that is provided by the drug (Gosh, 2013). Contributing to the problem is the fact that young people find themselves caught in a vicious circle of poverty, a lack of education and unemployment at a rate of around 57%, combined with an
alarming crime rate where about 60% of all crimes are caused by drug users with nyaope users forming a significant portion (MCEachran, 2013; GPCS, 2014). Nyaope use affects all communities where girls work as prostitutes and users steal from their parents and the community in order to get money to be able to afford their next hit (Simelane and Nicolson, 2013). The crime and devastation that is caused by nyaope is prolonging and deepening poverty in South Africa as it results in generations of thieves and addicts caught up in this cruel circle.

In South Africa, nyaope is such a serious problem (Gosh, 2013; Ho, 2013; MCEachran, 2013) that it is even mentioned in Parliament (Mayathula-Khoza, 2013). It is estimated that about 15% of the South African youth are susceptible to drug abuse, with figures from Gauteng indicating that youth exposure to drugs, including nyaope, is very high (Mayathula-Khoza, 2013).

As of 28 March 2014, nyaope is officially illegal with people found dealing in nyaope, or in possession of nyaope, facing prosecution as the South African Minister of Justice, Jeff Radebe, and Health Minister, Aaron Motsoaledi, have signed off on the amendment of the Drugs and Drug Trafficking Act, 1992 (Act 140 of 1992) (Government Printer, 2014). A fine or jail term not exceeding 15 years can be imposed by the court for a person who is using or in possession of nyaope, while dealers can get a fine or 25 years imprisonment (Government Printer, 2014). Prior to the Act being amended, there were no South African laws in place to deal with these designer drugs, which are created by altered drug mixtures where a substance's chemical structure is modified to varying degrees, or finding chemicals with entirely different chemical structures that produce similar effects (South African Press Association [SAPA], 2014). This nyaope concoction of mostly “legal” substances presented a challenge to law enforcement making prosecution difficult (SANews, 2013), aided by the misconception in the townships that nyaope is not even a drug (Mantuntuta, 2014). Essentially, a person could get arrested for the possession of the basic substances dagga and heroin in nyaope, but as the concoction itself was never classified a person could not get arrested for nyaope (Ephraim, 2014).

Rehabilitation, which takes between 12 and 15 months, is possible (Makhubu, 2014) but requires a multi-discipline professional approach with the support of a medical doctor, psychologist, social worker and drug counsellor all working together to assist users with the rehabilitation process. Unfortunately, heroin addiction treatment is very expensive due to the high cost of medication that is needed for the withdrawal symptoms (SADAG, 2011; GPCS, 2014). A new drug, known as Subutex, has been used with a significant degree of success to counteract the withdrawal symptoms from opiates like heroin, but ultimately successful rehabilitation is dependent on the desire of the user to quit.
and the social support that is available (Vitacare, 2015). The problem is that after a rehabilitation programme these adolescents have to come back to their everyday life.

2.7.5 EMERGING TRENDS

i) Drug concoctions
Many of the drug concoctions available, such as: purple drank (prescription-strength cough syrup mixed with cooldrinks such as Sprite or Mountain Dew), crunk (cough syrup and prescription pills), cheese heroin (heroin and cold medicines like Tylenol PM) and GHB (a combination of paint-stripper/pesticide called GBL and caustic soda), are now illegal in South Africa under the new amendment of the Drugs and Drug Trafficking Act, 1992 (Act 140 of 1992) (Ephraim, 2014).

ii) Strawberry Quick
Strawberry Quick, which is a combination of sugar, food colouring, flavourants and crystal meth, has hit the South African streets and is targeting schoolchildren in particular (News 24, 2015b).

iii) Krokodil (Desomorphine)
Desomorphine, which is an opioid derivative of codeine (low costs and ease of over the counter availability), also known by the street names of krokodil, Russian Magic, Cheornaya and Himiya, has a sedative and analgesic effect, and is highly addictive and potentially harmful (Drugs.com, 2013). Home-based versions of the drug may start with codeine, and can be “cooked” similar to illicit methamphetamine production to which organic solvents such as gasoline, paint thinner, lighter fluid, iodine, hydrochloric acid and red phosphorus (from matches) are added (Drugs.com, 2013). After the injection of these caustic agents into their veins, the users can develop complications such as serious vein damage, extreme skin ulcerations, soft tissue infections, necrosis and gangrene - a discoloured (green, black) scale-like skin that resembles a crocodile – and there have been reports of amputations. Reports indicate that the drug is fast-acting and highly potent (eight to ten times more potent than morphine) but, due to the short duration (euphoric effects may last less than two hours), frequent administration is needed in order to avoid the withdrawal symptoms and, as a result, quick, physical dependence may occur. A less obvious risk for users is that the fear of legal action prevents them from seeking medical help for the serious side-affects (infections and gangrene) that they experience (Drugs.com, 2013).

iv) Bath salts (PABS)
Psychoactive bath salts (PABS) stimulate the central nervous system by inhibiting the norepinephrine-dopamine reuptake system, leading to serious and even fatal adverse reactions (Drugs.com, 2013). The high that is produced by snorting the drug intra-nasally is similar to methamphetamine and the drug has been called "legal cocaine" (Drugs.com, 2013). Acute side-effects may include rapid heart rate,
high blood pressure, elevated body temperature, vessel constriction, muscle spasm/tremor and seizures. Higher doses can lead to behavioural and psychiatric effects such as severe panic attacks, psychosis (hallucinations, delusions), paranoia, agitation, insomnia (inability to sleep), irritability, violent behaviour including self-mutilation, suicide attempts and homicidal activity (Drugs.com, 2013).

v) Flakka (Alpha-pyrrolidinopentiophenone or alpha-PVP)
Flakka, the synthetic cathinone drug that is made from a similar group of chemicals as bath salts, has made its appearance in Florida, Texas-and Ohio and is now spreading through other parts of America (Olson, 2015). Alpha-PVP comes in the form of a white or pink, foul-smelling crystal that can be eaten, snorted, injected or vaporized in an e-cigarette or similar device (Drugabuse, 2015). When in the vaporized form, the drug enters the bloodstream very quickly making it very easy for the user to overdose. Although the effect can be as short as three to four hours, the lingering effects of using the drug can last for several days (Olson, 2015). Flakka can cause a condition called "excited delirium" that involves hyper-stimulation, paranoia-and hallucinations that can lead to violent aggression and self-injury, and has been linked to suicides as well as heart attacks (Drugabuse, 2015).

vi) "Superman" pills
From the Netherlands, a warning was issued about pills with a distinctive Superman logo, which were sold as the psychoactive drug MDMA 3,4-methylenedioxyamphetamine (also called ecstasy or Molly), but which actually contained a lethal dose of paramethoxymethylamphetamine (PMMA). Although there have been no reports from the United States of America so far, four people are thought to have died after taking these pills in the United Kingdom (Drugabuse, 2015).

vii) Synthetic Cannabinoids
Designer drugs called synthetic cannabinoids or more commonly “synthetic marijuana” or “synthetic pot” that are similar to the active ingredient of marijuana tetrahydrocannabinol or THC, are created in laboratories in order to evade legal bans on older compounds (Drugabuse, 2015). Apparently, the molecular structures of these synthetic cannabinoids are altered quite frequently, which makes it difficult to detect with laboratory tests (Pienaar, 2011). These synthetic drugs have the same effect on the body as dagga, but in South Africa they are marketed as “legal”, apparently as a result of inadequate legislation (Pienaar, 2011). Some of these designer drugs are: “Cloud 9,” “Relax,” or “Crown”, which contain the synthetic compounds of AB-PINACA and AB-FUBINACA, and are sold as a liquid in eyedrops’ bottles and often used with vaporizing devices such as e-cigarettes (also known as “electronic hookah pens”). These drugs are reported to cause hallucinations, aggressive behaviour, racing heartbeat, drowsinessand vomiting (Drugabuse, 2015).
“Mojo,” “Spice,” “K2” and “Scooby Snax” contain the synthetic compounds MAB-CHMINACA, and ADB-CHMINACA, and are reported to cause severe agitation, anxiety and paranoia; raised heartbeat and blood pressure; nausea and vomiting; muscle spasms, seizures and tremors; intense hallucinations and psychotic episodes, including suicidal fixations and other harmful thoughts (Drugabuse, 2015).

viii) Caffeine Powder
Pure caffeine powder, which can be bought online, may be attractive to young people looking for added caffeine stimulation or as help for those who would like to lose weight (Drugabuse, 2015). But just one teaspoon of pure caffeine powder, which is equivalent to about 25 cups of coffee, constitutes a lethal amount and a severe caffeine overdose can cause fast and erratic heartbeat, seizures, vomiting, diarrhoea and disorientation (Drugabuse, 2015).

2.7.6 OVER THE COUNTER MEDICATION AND OTHER FORMS OF DRUGS
i) Rohypnol
Rohypnol (Figure 2.10), also known as the "Date Rape Drug", is abused especially by teenagers at house parties.

Figure 2.10: Rohypnol (Source: Drugrehab, 2015)

The active ingredient of Rohypnol is Flunitrazepam, which is part of the Benzodiazepine type of drugs, can only be obtained with a prescription and is used as a sleeping tablet (Drug Aware, 2003) with various street names. "Rosshies" is the most popular because of the fact that the producer's name is printed on the tablet. Rohypnol is largely used by crushing it and mixing it with the drink of an unsuspecting female with the sole purpose of rape. As taking the drug results in a very high level of intoxication, the next day the victim cannot remember any details of the rape. The way to prevent this is for a female to only accept drinks from someone that they know very well and whom they know will not "spike" their drinks; not to receive a drink that is in an open container, but to rather open the container themselves or to watch the person that is pouring the drink, and not to leave an open drink unattended (Drug Aware, 2003).
ii) Welcanol
Welcanol (Figure 2.11) is a synthetic form of heroin, known as the South African Heroin (Pink Heroin) was very popular during the eighties due to the fact that cocaine and heroin were very scarce in South Africa. If used correctly, this schedule 7 tablet is taken orally and is used as a strong painkiller for people like cancer sufferers (Drug Aware, 2003). But people are misusing it by mixing the crushed tablet with water and injecting themselves. The street name for Welcanol was “Pinks” due to the fact that when dissolved in water, the liquid had a pink appearance. When heroin became more freely available in South Africa in the nineties, it replaced "Pinks" (Drug Aware, 2003).

![Image of Welcanol]

Figure 2.11: Welcanol (Source: Drug Aware, 2003)

iii) Pethadine
Pethadine (Figure 2.12) is a very strong painkiller, supplied in the form of a pink ampoule and is prescribed by doctors for patients suffering from high levels of pain. It is not commonly sold or available on the street but it has been found that especially medical practitioners have sometimes become addicted to this substance. Doctors tend to abuse it due to the myth that Pethadine has very few, if any, side-effects, but when used over a period of time the user does suffer from serious side-effects.

![Image of Pethadine]

Figure 2.12: Pethidine (Source: Drug Aware, 2003)
iv) Inhalants / Solvents
Inhalants (Figure 2.13) refer to the vapours from toxic substances which are inhaled to reach a quick high. Some of the common household products that could be abused as inhalants include: shoe polish, glue, toluene, gasoline, lighter fluid, nitrous oxide or “whippets,” spray paint, correction fluid, cleaning fluid, amyl nitrite or “poppers,” deodorizers or “rush,” and lacquer thinners or other paint solvents (FDFW, 2012).

![Figure 2.13: Inhalants (Source: Act on Drugs, no date)](image)

After inhalation there is rapid absorption of the chemicals through the lungs into the bloodstream where it goes to the brain and other organs such as the heart, kidneys, liver and bone marrow where it can cause irreversible physical and mental damage. The effect of these products is similar to anaesthetics which slow the body’s functions down as they starve the body of oxygen forcing the heart to beat irregularly and more rapidly. After an initial high and loss of inhibition come drowsiness, light-headedness and agitation.

In South Africa, the use of inhalants and solvents, especially by young people, continues to be a problem (DSD, 2013), although figures obtained from South African youth risk behaviour surveys suggest that the figures are relatively low, with 12% of learners from Grades 8 -11 admitting to the use of inhalants (Reddy et al, 2010).

2.8 LONG-TERM EFFECTS OF DRUG ADDICTION
The most common long-term psychological effects of drug addiction as described by Drugabuse (2015) are:

**Depression.** As the user develops a tolerance for drugs, ever-increasing amounts of the substance are needed to get a high. When it is not possible to achieve the desired state of euphoria, the user may become depressed. Shame and remorse about their condition can also cause chronic depression.
amongst users, creating a cycle of addiction; the more depressed the user feels, the more likely they are to continue to use drugs.

**Paranoia.** Cocaine and marijuana users often report a feeling of paranoia, the feeling that “everyone is out to get them”, over the course of their dependence. This feeling could be heightened by the fact that they know that buying or using drugs is illegal.

**Anxiety.** While users are waiting for their next fix, they will begin to feel anxious or unsettled, becoming fidgety and not able to stay focused.

According to NIDA, the physical effects of drug addiction as described by Drugabuse (2015) include:

**The kidneys.** Habitual drug use over a period of many years can cause kidney damage.

**The liver.** Liver failure is a well-known consequence of alcoholism, but can also occur amongst individuals who are habitual users of Vicodin and OxyContin.

**The heart.** The most common conditions among drug addicts are heart disease and heart failure due to the stimulants that are being used.

**The lungs.** As most of the drugs are taken in by smoking, the user’s lungs are put at serious risk.

In addition, long-term drug addicts will begin to build a tolerance to drugs. Tolerance is dangerous as it causes the individual to use more and more of the drug in order to achieve the desired euphoric or stimulated state. This puts the individual at a constant risk of overdose and even death.

In many cases, the damage caused by long-term addiction can be reversed or at least seriously improved with proper treatment and ultimately sobriety (Drugabuse, 2015).

### 2.9 DETERMINANTS OF DRUG ABUSE

In the late 1970s, Urie Bronfenbrenner developed his ecological model based on the argument that a person’s development is the composite of an individual’s genetic inheritance, the immediate family influences and other components of the environment (Maring and Braun, 2005). According to this ecological model, the individual is in the centre surrounded by four subsystems influencing him/her (Figure 2.14).
The following sub systems are recognized:

**The microsystem:** This microsystem is presented by the innermost circle and consists of the immediate environment of the individual (Bronfenbrenner, 1993), and would include components such as the family, friends and people closely related to the individual (i.e. interpersonal relations); individual activities, social roles and personal matters of health and well-being. It is in this microsystem where personal and environmental risk factors and protective factors influence outcomes and where the use of AOD is in response to those conditions (Maring and Braun, 2005).

**The mesosystem:** The linkages and processes between two or more components in the microsystem comprise the so-called mesosystem (Bronfenbrenner, 1993). Components of the mesosystem could be the extended family, peers and friends, school environment and workplace. The mesosystem incorporates linkages between settings where individuals live, work, attend school and participate in the community (Maring and Braun 2005).
The exosystem: This is the external environment in which an individual is not directly involved with, i.e. it is external to his or her experience, but nonetheless events that occur in these environments affect him or her anyway. This system relates to the community (Bronfenbrenner, 1993), as well as health care centres, mass media, friends of the family, welfare centres and parents other than those of the individual (Maring and Braun, 2005). Features of the community, such as availability of services and employment, access to formal and informal support, and socioeconomic climate, are all part of the exosystem.

The macro system: This system is the system furthest removed from the individual and represents the larger societal context not experienced in the immediate environment (Maring and Braun, 2005), with influences that are different for the various socioeconomic, ethnic, religious—and other subcultural groups (Bronfenbrenner, 1979). Bronfenbrenner (1993) refers to this system as the "societal blueprint for a particular culture or subculture", and the macro system's components could therefore include ideologies, economics, social values and politics (Maring and Braun, 2005).

The chronosystem: Bronfenbrenner also distinguished a so-called chrono system, which does not resemble a system surrounding the individual, but rather incorporates change or consistency over time (Bronfenbrenner, 1993). The chronosystem would entail the change from childhood to adulthood (the period of adolescence) as well as the current period of change in South African society (van Zyl, 2013). When aiming to develop an effective substance abuse prevention programme, it is very important to have an understanding of the determinants that influence substance use. As stated by Botvin et al (1984), when analysing the factors involved in early substance use and abuse there are striking commonalities as similar social, cognitive, attitudinal—and personality factors appear to facilitate the development of regular use. Also, as drug abuse is seen as the result of the interaction between the individual, the substance and the environment (Geramian et al, 2012), environmental factors have a role to play.

Bronfenbrenner's Ecological Model (Bronfenbrenner, 1993; van Zyl, 2013) will be used as a theoretical framework to interpret some of the determinants that influence drug use in South Africa. Some of these factors/problems that are associated with and linked to substance abuse will be discussed in more detail.

2.9.1 AT THE INDIVIDUAL LEVEL
i) Gender
South African studies have consistently found higher rates of substance use in male learners than female learners (Ramlagan et al, 2010; Moodley et al, 2012; Onya et al, 2012), with trends suggesting
roughly a 80:20% male: female split across the country (van Heerden et al, 2009). The respondents of the Ramlagan et al (2010) study generally believed that males have more funding and opportunity to utilise or abuse substances. It also appears that parents are stricter with female than with male children, and that it is more socially acceptable for male youths to smoke and consume alcohol (Ramlagan et al, 2010).

The likely reason why men abuse substances is to be accepted and to form part of a gang, while women are more likely to abuse over the counter medication than alcohol or drugs as a response to loneliness and rejection (Eberlein, 2011). Women who are using drugs are particularly vulnerable to gender-based violence due to the high levels of gender inequity and disempowerment in South Africa. As a result, women who use drugs often exchange sex for drugs and they don’t have the ability to protect themselves from violence, to negotiate condom use and to take control over their drug use (Wechsberg et al, 2013).

ii) Age
Global data suggests that substance use often starts between the ages of 14 and 15 years (Richter et al, 2006) and the predominant reason seems to be that adolescents are in the transition period between childhood and adulthood. This transition phase is characterized by physical, psychological, emotional and social changes, together with internal and external physical development (Ramorola and Toale, 2014) where they seem to be more impulsive, reckless and non-conforming than during other developmental stages of their lives (Visser and Routledge, 2007). When compared to adults, in general adolescents are also less capable of assessing risks and rewards accurately and self-regulating their behaviour (Binford, 2012).

A South African study by Moodley et al (2012) reported that some of the participants first started using alcohol, cigarettes and cannabis while still at primary school. A significant number of participants who had ever used alcohol had their first alcoholic drink by the age of 14, with the vast majority of participants having had their first drink by the age of 16. First use of cigarettes and cannabis among the participants occurred mainly between the ages of 14 and 17 years and 15 and 17 years, respectively. First use of nyaope most commonly occurred at 17 years of age (Moodley et al, 2012). The mean age in years of first use of alcohol, cigarettes, cannabis and nyaope among the participants was 14.6 (SD 2.0), 14.8 (SD 2.3), 15.1 (SD 2.2) and 15.8 (SD 2.6), respectively (Moodley et al, 2012). Young arrestees were also more likely to test positive for the use of various drugs, such as cannabis, mandrax and cocaine, than their adult counterparts (Parry et al, 2004).
If policy makers are aware of the age of onset for substance abuse, it can help them to focus on this specific age group to increase the effect of interventions (Geramian et al, 2012). Also, taking into consideration that data showed that younger youth that have access to softer drugs at home and that have more money available to them, start abusing drugs earlier (Ramlagan et al, 2010).

Older adults with aging-related health and psychosocial conditions constitute an unique, at-risk population for psychoactive drug use (Wu and Blazer, 2011). This is due to the fact that aging-related physiological changes may increase sensitivity to the effects of substance use (Dowling et al, 2008), and prescriptions of psychoactive medications also may increase the user’s risk for non-medical use, abuse or dependence (Culberson and Ziska, 2008).

iii) Race
In Gauteng and Mpumalanga, it appears that Whites are the highest users of substances, followed by Blacks, Coloureds and Indians; relative to other race groups, Coloureds are the highest users in Port Elizabeth and Cape Town, while Black substance abusers far outnumber any other group in the East London area (van Heerden et al, 2009).

iv) Genetics
Scientists recognize that there is a genetic predisposition to drug abuse (Spooner, 1999; Boyd, 2011) as addiction has an inherited component that often runs in families (University of Utah, 2014). The specific genes involved haven’t been identified yet as there are many factors (both inherited and environmental) that determine the likelihood of a person becoming an addict. It might have to do with dopamine that is found in the brain and a person’s gene-controlled relationship with this “feel good” chemical (Boyd, 2011).

vii) Mental health
Some people use substances as an attempt to relieve stress. This can be the root of substance abuse in adolescents with underlying mental conditions such as generalized anxiety disorder or social anxiety disorder (Boyd, 2011). One way of coping with internal or external stress that is too severe for the individual to handle in a normal, adjustable way is to abuse substances as a mal-adjustable reaction to the stress (Niazi et al, 2005).

Links were found between cannabis and schizophrenia (Degenhardt and Hall, 2006) as well as between methamphetamine use and various psychiatric disorders (Yen and Chong, 2006; Russel et al, 2008). Brook et al (2005) have found associations between symptoms of depression (like disturbed sleep and loss of appetite) with adolescents’ use of alcohol, cannabis and cigarettes. Depression is strongly associated with risky illicit drug use and smoking (Morojele et al, 2009; Sorsdahl et al, 2014).
Plüddemann et al (2010) reported that methamphetamine use was significantly associated with higher levels of aggressive behaviour, depression and a greater risk for mental health problems in general, with the use of methamphetamine doubling the odds of being in a higher risk category for aggression (Plüddemann and Parry, 2012).

From the literature it is clear that mood and anxiety disorders and substance use disorders commonly co-occur, with the relationship between these conditions being complex and bi-directional (Morojele et al, 2012). One of the possible explanations for this relationship is that the presence of a primary disorder is increasing their vulnerability for a secondary disorder, that people attempt to “self-medicate” depression with AOD use, and that the social, interpersonal and work-related problems caused by AOD problems result in depression (Davis et al, 2008).

viii) Behaviour problems and substance use
According to Colder et al (2013), behavioural problems amongst adolescents may serve as early markers of risk as they often precede the onset and escalation of adolescent substance abuse. The behavioural problems can be divided into internalizing problems, which is a reflection of a person’s internal distresses like depression, anxiety and social withdrawal; and externalizing problems, which bring a person into conflict with others through, e.g. peer affiliations, aggression, violence and criminal activities (Colder et al, 2013). This could be due to a lack of self-confidence to say no and a lack of the necessary personal skills to resist addictive substances (Geramian et al, 2012).

A common risk involved with internalizing problems is self-medication, where the use of medication is motivated by the desire of the user to reduce emotional distress, but in actual fact the risk is acutely negatively reinforced by the pharmacological consequences of the use of this medication (Colder et al, 2013).

ix) The general profile of a drug user
The drug user profiles, as described by Raynard and Wolvaardt (2006), are:

- Dagga users are more likely to be male, under the age of 20 and arrested for theft or drug-related crimes.

- Mandrax users are more likely to be male, Indian or Coloured, under the age of 25 and arrested for burglary, shoplifting, theft out of a motor vehicles, drug-related crimes or violations of the Firearms Act.
• Cocaine users are more likely to be female, White or Coloured, under the age of 30 and arrested for common robbery, prostitution and other sexual offences, burglary, theft out of a motor vehicle, trespassing and drug offences.

• Of those in the study who tested positive for heroin and admitted using it, all were White. However, recent statistics from drug treatment centres indicate that most heroin users are Coloured males, averaging approximately 24-years of age.

• Even though tik users were not part of the Raynard and Wolvaardt (2006) study, current statistics revealed that in the Western Cape, on average, 20 percent of school-going youth are actively using crystal meth and that 60% of clients at a Drug Counselling Centre were tik users (Serra and Salvester, 2013).

2.9.2 AT THE MICRO SYSTEM LEVEL
i) School and academic environment
Morojele et al (2001) did a longitudinal study over a period of two years among high school learners in Cape Town and reported that there was a strong association between binge drinking, school dropout and low academic aspirations. This was supported by Reddy et al (2007) who also found that alcohol and cannabis use was associated with poor academic performance among learners in South Africa. The availability, acquisition and use of drugs in and around schools facilitates low academic aspirations and performing poorly at school, and has been found to be related to adolescents’ use of alcohol (Masita, 2007).

ii) Peer influence and friendships
Actively choosing to be a part of a particular peer group can create opportunities or constraints, depending on the environmental influences (Botvin et al, 1995), as peer influence or the opinions of others are important and strong motivators for many individuals (Sheldon, 2013). The National Institute on Drug Abuse reports that peers have a large influence on drug-abusing behaviour (Boyd, 2011) as many teens use drugs for the first time in order to avoid being stigmatized by their friends or to impress others. Typically, adolescents use alcohol and/or other drugs with friends and peers mainly for recreational purposes (Morojele et al, 2001) as alcohol and drug use is related to the number of users amongst an adolescent’s closest friends (Brook et al, 2006). Masita (2007) did a study in the Free State and reported that peers had a greater influence on learners initiating substance use than the family, school and media. A feature of adolescent gangs and other deviant peer group networks is the use of drugs, where membership often necessitates the use of different drugs (Morojele et al, 2001). But even
within relatively normal adolescent peer groups there is the possibility of behavioural susceptibility to negative peer influence (Allen et al, 2012).

Information obtained from recent neurological research helps us to understand why adolescents are more susceptible to peer pressure (Binford, 2012). Magnetic Resonance Imaging (MRI) studies suggest that the adolescent brain considers peer exclusion a threat to their existence as, when tested, their brain’s responses showed similarities between peer rejection and a physical threat or being cut off from their food supply (Binford, 2012).

iii) Interpersonal family dynamics
Geramian et al (2012) cited the ways the family controls the adolescent, the interpersonal communications in the family, e.g. lack of friendly relationships among family members, the level of emotional dependence between parents and children, parental neglect and abuse of children (Spooner, 1999; Oshri et al, 2011), and the unreasonable expectations of strict parents (Geramian et al, 2012) as factors that have an influence on substance abuse by adolescents.

Brook et al (2006) reported that when adolescent children feel that their parents/primary caregivers care about them and spend time with them substance abuse is less likely to occur. This is due to the fact that a healthy family relationship provides an important base for future peer relationships (Allen et al, 2012). Without a nurturing home environment, the adolescents are likely to seek out friends in order to fulfill their need for acceptance and recognition (Brook et al, 2006). Epidemiological surveys in South Africa suggest that high proportions of drug consumers have experienced especially difficult family circumstances as children (Frank and Fisher, 1998).

Chronic psychological trauma in childhood leads to numerous psychological problems, one of which is addictive behavior. Such children are also more likely to experience depression, anxiety, eating disorders and a wide range of other symptoms and problems (Lazenbatt, 2010). If a person was abused as a child or is currently involved in an abusive relationship, it can create a level of stress that can trigger the use of drugs (Boyd, 2011).

Adolescents who are exposed to parents and caregivers who are using alcohol and other drugs are more inclined to also use them, modelling the behaviour of the parent or caregiver as it is considered to be acceptable (Brook et al, 2006) as many teens get their values from their parents and other adult influences (Boyd, 2011).
iv) Community factors
Many adolescents are exposed to public drunkenness (Parry et al, 2004) and anti-social behaviour (King et al, 2003) on a daily basis in the community. As a result, adolescents who are exposed to such behaviour regularly are more likely to model it and/or to consider it acceptable (Moodley et al, 2012). This is supported by the Ramorola and Toale (2014) study where the participants put the blame on the community as the main source of both legal and illegal drugs as drugs are freely available on a societal and community level. If it is easy to access drugs, the likelihood of use will be high (Morojele et al, 2009).

According to Peltzer et al (2010), a third to half of the South African population live in urban townships and informal settlements, of which the vast majority of residents in these impoverished communities lack full-time jobs and stable incomes. Due to the high rate of unemployment, most rely on the informal economy to supplement their income, where the selling of illegal drugs has become a way of surviving (United Nations Office of Drug Control and Crime Prevention [UNODCCP], 1999).

2.9.3 AT THE MESO SYSTEM LEVEL
i) Functional and recreational drug use
Pelzer et al (2010) reported that while cannabis consumption was previously principally a male practice, consumption is now reaching increasingly into different gender, age and religious groups. A possible reason given for the expansion of consumer groups is due to the rise in “functional” drug use, i.e. those doing physically demanding or dangerous work like construction workers, truck drivers and farm workers are now using cannabis as it enables them to stay awake, to work longer without eating and to continue working. Included in the “functional” drug users are people like sex workers, criminals and street children who are confronting social danger involving transgression of taboos, whether legal or more widely social and cultural (Peltzer et al, 2010).

There is a broad base of recreational consumption amongst the higher-income groups, like musicians and artists, whose rationale is that it is used in order to get the necessary inspiration to be creative and to help them to overcome their social inhibitions when performing in public (Peltzer et al, 2010).

2.9.4 AT THE EXO SYSTEM LEVEL
i) Technology and mass media
With all the advances in technology, any person with a computer and an internet connection is now able to download the recipes/formulas to manufacture illicit drugs and has access to the addresses of the sites that are offering illicit drugs and precursor chemicals for sale (DSD, 2013).
Mass media product advertising can influence norms, attitudes and beliefs, which in turn can have an impact on behaviour (Botvin et al, 1995). By watching films and through exposure to advertisements, the use of drugs and drinking is encouraged, portraying it as a social norm (Snyder et al, 2006).

**ii) Decriminalization of cannabis**
In South Africa, there are campaigns and debates about the decriminalization of cannabis. In part, this is due to the widespread perception that illicit drug consumption is expanding and will continue to do so. This is aided by growing tolerance towards drugs and ineffective law enforcement (Peltzer et al, 2010). Decriminalisation of drugs constitutes a harm-reduction policy which can be very controversial because it aims to make harmful actions "safer", which implies acceptance of the action but the dilemma is the difficulty of knowing what the impact of decriminalisation will be before its implementation (Fellingham et al, 2012).

**iii) Reality of everyday life**
The social injustice among the non-white population in the “old” South Africa created an environment where the consumption of illicit drugs provided temporary escape from the harsh reality of everyday life by providing coping skills and uplifting the mood (Peltzer et al, 2010). Anecdotal evidence also supports a connection between increased substance abuse and both increased availability of drugs and the psychological consequences of adjusting to life in the “new” South Africa amongst the white population (UNOCD, 2002a).

**iv) Enforcement Policies**
In South Africa, most of the drug enforcement initiatives have primarily focused on the conduction of drug busts against large-scale distributors and drug-trafficking syndicates, while the local police seldom focus on the exchanges that take place between sellers and buyers in public places (Peltzer et al, 2010). The situation is so dire that in the Western Cape elements within the Muslim community launched a vigilante movement known as People Against Gangsterism and Drugs (PAGAD) out of frustration at the in-effectiveness of the police in dealing with the problems related to the violence and crime of drug abuse (Peltzer et al, 2010).

**v) Economic and social change**
There is a strong correlation between drug use and rapid modernization that is leading to the decline in traditional social relationships and forms of family structure (Peltzer et al, 2010). Furthermore, many South African adults find themselves in a social environment that is conducive to drug use, as there is a degree of social support for drug use, exposure to such use and limited discrimination against it (UNOCDCP, 1999).
Historically, cannabis formed an integral part of the culture of traditional African communities and was governed by strict rules, controlled by tribal elders, under which it could be used (Peltzer et al, 2010). But with the increase in urbanization and the breakdown of traditional community controls, cannabis has gained popularity among all ethnic groups (UNOCD, 2002b).

2.9.5 AT THE MACRO SYSTEM LEVEL
Factors that affect experiences with drugs at the macrosystem include the user’s beliefs (especially expectations) and personality characteristics, the setting and situation in which drugs are used, i.e. number and nature of others present, other activities going on, etc.

Some of these factors will be discussed in more detail.

i) **Culture and cultural identification**
Visser (2003) regards substance use as a social act that is embedded in a context of values, attitudes and conceptions of reality that is related to cultural beliefs. Visser and Routledge (2007) reported that in their study it was found that English- and Tsonga-speaking adolescents had the lowest level of substance abuse, while Setswana speakers were amongst the highest users in all the categories. This is an indication that patterns of substance abuse can be influenced by community factors, which is supported by Parry et al (2004), who found that the White respondents in their study were more often current drinkers of alcohol while heavy drinking was more prevalent in the African context (Rocha-Silva et al, 1998).

Onya et al (2012) thought that the lower prevalence rates of alcohol use that they reported in their study amongst females might also be due to cultural influences where in some places, according to traditional African values, alcohol use and cigarette smoking by Black African adolescents in general and females in particular is culturally prohibited (Madu and Ma-Queen, 2003).

ii) **Spirituality**
Galanter et al (2007) reported on a number of studies whose findings reflect a positive relationship between the abuser’s spiritual orientation and recovery. Avants et al (2001) found that a higher self-report rating on spirituality or religious support was an independent positive predictor of abstinence from illicit heroin and cocaine, while Flynn et al (2003) found that patients who indicated religion or spirituality as a source of recovery support were almost twice as likely as those who did not to be free from heroin and cocaine after 5 years.
iii) Locus of control

The concept LOC, which evolved from Bandura’s Social Learning Theory (Bandura, 1971), refers to an individual's perceptions about the underlying main causes of events in his/her life, was originally developed by Julian Rotter in 1954 (Rotter, 1966) and is considered to be an important aspect of personality. Rotter was of the opinion that behaviour is largely guided by reinforcements (which could be in the form of rewards and punishments) and, based on how the individual experiences these “reinforcements”, they develop their beliefs about what causes their actions and what kinds of attitudes and behaviours people adopt (Neill, 2006).

In actual fact, the full name that Rotter gave to the construct was Locus of Control of Reinforcement, bridging behavioural and cognitive psychology (Neill, 2006). Rotter suggested that whether or not people believe a situation or event is under their own control will influence their reward expectancy and behaviour (Rotter, 1996). Essentially, an individual’s LOC would impact on how they perceive and interact with their surroundings. Therefore, when an individual is introduced to a new experience, it is expected that he/she will react in a consistent manner that is in line with their LOC orientation and level of cognitive processing (Page and Scalora, 2004), interpreting the events as being either a result of one’s own actions or due to uncontrollable external factors (Halpert and Hill, 2011).

LOC can be defined as the source of confidence that is held by an individual when dealing with events that occur internally or externally to them (Khilid et al, 2013). Individuals with a high internal LOC orientation believe that the events that happen in their lives are caused by their own behaviour, while individuals with a high external LOC orientation believe that events happen because of external factors like luck, fate, God and powerful others. From Rotter’s perspective, the effects or outcomes of an individual’s behaviour impacts greatly on the motivation to engage in such behaviour, i.e. if a person would like to avoid negative consequences, he/she would engage in more positive behaviours which would lead to better outcomes that eventually become a repeated or reinforced behaviour (Kang et al, 2015). The LOC that the individual subscribes to can determine the level of success they experience in life. For a person who is attempting to overcome an addiction, it might be more difficult if they subscribe to a higher external LOC orientation.

The LOC is formulated as a one-dimensional construct represented by an internal-external (I-E) scale where a person’s generalized control beliefs are reflected by a single score which can range from highly internal to highly external (Rotter, 1966) (See Figure 2.15). Rotter’s LOC scale helps assess whether a person has a tendency to think situations and events are under their own control or under the control of external influences. In this test, the participants are forced to choose between two statements and,
depending on their choice (an internal or external interpretation), the person’s belief about their control over a situation is assessed (Halpert and Hill, 2011), defining this individual’s personality characteristics. The implication is that if you change the way a person thinks, or change the environment, then behaviour should also change (Neill, 2006; Kang et al, 2015), which has implications for the planning of treatment interventions amongst drug addicts.

The original LOC questionnaire consisted of 13 questions which measured the expectancies for internal versus external control of reinforcement (Lefcourt, 1982). Since the first LOC questionnaire, several different scales have been developed targeting certain groups. They range from questions requiring a ‘yes’ or ‘no’ response, ‘strongly disagree’ to ‘strongly agree’ responses, to an open-ended assessment of values, expectancies and locus of causation (Lefcourt, 1982). It is thus not a case of choosing either internal LOC or external LOC as individuals can vary on the scale depending on the situation at hand (Kang, et al, 2015), but most people lean in one direction or the other (Horvath, 2011). Once the LOC orientation is identified, it is easier to align recovery efforts, especially for drug addicts, to the individual’s personality and preferences (Horvath, 2011).

<table>
<thead>
<tr>
<th>External Locus of Control</th>
<th>Internal Locus of Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual is not in control of the outcome, believes that behaviour is guided by fate, luck, powerful others, independent of own behaviour or decisions</td>
<td>Individual is in control of the outcome, believes that behaviour is guided by personal decisions and efforts</td>
</tr>
</tbody>
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**Figure 2.15: Locus of Control continuum**

In general, the feeling is that a more internal LOC orientation is desirable as it seems to be psychologically healthy for a person to perceive that he/she has control over those things which he/she is able to influence (Neill, 2006). It also signifies that a person with a high internal LOC orientation believes that they are responsible for their own life and that their successes and failures are caused by
their own efforts or lack thereof because they hold internal accountability for the events that happen to them (Kang et al, 2015).

Mamlin et al (2001) observed the following trends amongst individuals with a high internal LOC orientation:

1. Males tend to be more internal than females
2. As people get older they tend to become more internal, and
3. People higher up in organisational structures tend to be more internal.

Neil (2006) warns against the overly simplistic view that internal is good and external is bad by giving examples that internals can be psychologically unhealthy and unstable, and suggested that there is the need to match the internal orientation by competence, self-efficacy and opportunity so that the person is able to successfully experience the sense of personal control and responsibility.

As described by Kang et al (2015) and Alcoholrehab (2008), AOD users who believe that they are in charge of their own destiny (high internal LOC orientation) benefit from such an attitude because:

- A new approach is needed in order to achieve real sobriety if addicts have been putting the blame on outside forces (high external LOC orientation) for their problems.
- In order to recover there is a need for the addict to take responsibility in developing and engaging in activities that will improve their situation and lives.
- If the addict is motivated to succeed and believes in the recovery plan, chances of a relapse will be less.
- The road to recovery is hard work for the addict without the help of any outside forces.
- A negative attitude of an addict who believes they are the passive victims in life will have a negative impact on any treatment programme.
- If a person feels that they are not in control, they will also not be motivated to take any positive action.
- It is an ineffective strategy to blame other people or life for your own problems as it turns the person into a passive victim instead of an active participant.
- A person feels motivated when they feel in control of their life and future. If it feels as if the future is out of their hands, there will be no motivation to take any positive action.

People who are more on the external side of the LOC continuum take very little, if any, responsibility for the events that happen in their life, blaming things like family, friends, work, society, politics or bad luck for the problems they encounter, and they don't believe that their efforts will have any impact on their
situation therefore they have very little control over their destiny (Kang et al, 2015). According to Maltby et al (2013), they also show more symptoms of stress and have higher instances of clinical depression. Many of them are oblivious of the fact that they have some control over their downward spiral into addiction as every single person has a choice. Only once they understand that they can take charge of their destiny by controlling the choices that they make will they be able to break out of this cycle.

There are two types of external LOCs, namely defensive and passive. Like those with an internal LOC, the defensive type is ambitious and achievement oriented, but they project their failures onto external sources and place blame on others when disappointment occurs. Passive externals believe that every type of event is determined by influences that are outside their realm of control (Messer and Meinster, 1980).

It is typical for substance dependent patients that they can’t predict or determine the amount and when they will use drugs. However, this loss of control applies to most if not all addictive behaviours as once they begin they can’t stop (Jafari and Shahidi, 2009). Often drug addiction develops into a chronic, relapsing condition that is resistant to treatment and known for relapses (Hall, 2001). This disorder is also characterized by a compulsive drive to find drugs and is associated with major disruptions in the brain systems responsible for self-control (Goldstein and Volkow, 2002) and a loss of control over drug intake. Ersche et al (2012) mentioned that substance-dependent individuals demonstrate significant impairment in the control of behaviour, attention and other cognitive functions. And their belief of being in control, rather than their actual abilities, play an important role in their engagement in treatment and determine their efforts in maintaining drug abstinence (Ersche et al, 2012).

Page and Scalora (2004) are of the opinion that LOC orientation can be used as a promising psychological construct, especially when conducting risk assessments amongst juvenile offenders when attempting to predict their amenability to treatment as well as what their response would be to treatment interventions. Due to the fact that a person’s LOC orientation is rather stable and influences his/her approach to problems, it becomes highly relevant when recovering from a drug addiction (Horvath et al, 2013). When a person’s LOC orientation is in conflict with a treatment approach, the programme is almost certain to fail. Chances of success will be much higher if the treatment programme matches the specific LOC orientation of the drug addict (Horvath et al, 2013). Thus the assessment of the control beliefs of drug users may provide useful information that can be applied during their rehabilitation programmes. Furthermore, the drug-related LOC has the potential to be used as a predictor which could be modified through treatment (Abbott, 1984). This is supported by Fisher and Beckett (2006) who reported that the fact drug users have less personal control over their
behaviour than non-users needs to be considered in therapy so that drug users could have increased internal LOC orientation.

If there is no LOC orientation change during treatment, it could be an indication that the treatment interventions are not being effective; a shift in LOC orientation from external to internal could be an indication of a positive gain from the treatment, while a shift from internal to external orientation or to a more external orientation may be an indication of ineffective treatment (Page and Scalora, 2004).

iv) The reckless behaviour of teenagers
Reckless behaviour is “virtually a normative characteristic of adolescent behaviour”. A theory for this behaviour is that adolescents develop this characteristic as a social skill whose purpose is to help them to act more independently from their parents and other adults, so that they can evolve into independent adults (Binford, 2012). Most people are able to enjoy a rush of feel-good chemicals from appropriate sources, while some teenagers are seeking their thrills and adrenaline rushes by achieving that "high" feeling from substance use, despite the negative consequences (Boyd, 2011). Adolescents and the youth are more susceptible to drug abuse due to the fact that adolescence is a period of curiosity, experiencing, and seeking for personal identity. Many times the initiation of drug abuse takes place during the transition from childhood to adolescence (Geramian et al, 2012). It is more likely to find self-abusive behaviours, such as drug use, amongst teenagers with a low self-worth than well-balanced teenagers (Boyd, 2011). When alienated from society, it can contribute to problematic drug use (Spooner, 1999).

2.9.6 AT THE CHRONOSYSTEM
i) Geographical location
In South Africa, the production and abuse of addictive stimulants has increased dramatically (UNODC, 2004; Harker et al, 2008; Eberlein, 2011; Kalula and Nyabadza, 2012), so much so that South Africa has the dubious distinction of having the largest illegal drug market in sub-Saharan Africa (Thomson, 2013). Expanding trade links with other parts of the world, such as Asia, Europe, and the Americas, have also made South Africa attractive to drug traffickers (Ryan, 1997; Thomson 2013). This is an indirect result of porous borders due to the dramatic increase in the number of international flights to the country, relaxed visa requirements for South Africans to travel overseas, movement of large numbers of legal and illegal people across the borders, poorly monitored borders and ill-equipped customs (Steyn 1996; Ryan 1997). Thus, as described by the executive director of the United Nations Drug Control Programme (UNDCP), due to the convenient location between the main drug producing
areas of South East Asia and South America, supported by an infrastructure of airports and harbours, South Africa is creating an attractive market for drug trafficking (Ryan 1997)(Figure 2.16).

Figure 2.16: Map of the main drug-smuggling routes around the world (Hübschle, 2010)

**ii) Socio-political history**
Despite the prominent feature of alcohol use in the socio-political history of South Africa, access to and availability of many drugs used internationally were restricted due to the country’s physical and economic isolation, the strict monitoring of external borders and stringent internal controls during the apartheid era (Myers et al, 2004). But since the first democratic elections in South African (1994) and the changes in the global and local drug markets, South Africans now have access to a broad range of illicit drugs (UNODC, 2004; Harker et al, 2008; Eberlein, 2011), which include cocaine and heroin (Myers et al, 2004), marking the beginning of a new drug use culture as a consequence of the opening of the country’s borders (Leggett, 2001).

**iii) Global changes and recurrent internal conflict**
In the African region, the internal economic, social and political instability has created conditions that foster drug use and sales (Drug Policy Alliance Africa [DPAA], 2005). According to Odejide (2006), the informal trading of drugs, such as cocaine, crack cocaine, heroin and ecstasy, has become the norm as a result of poverty. Also, the fall in the world price of basic commodities in Africa has encouraged the shift to cannabis production, with South Africa the world’s third largest producer of cannabis (UNOCD, 2006).
iv) Society in transition
During the apartheid years, South Africa was relatively isolated from the rest of the world and substance use primarily revolved around locally produced substances like alcohol, tobacco and cannabis (van Heerden et al, 2009.) Changes in the political, economic and social structures within South Africa during the 1990s and early 2000s (both before and after Apartheid) made the country more vulnerable to drug use (Peltzer et al, 2010). Factors that contributed to the increase in drug use were: availability and ease of accessibility due to tolerant/ limited enforcement of drug laws, the diversity of drugs available (especially to the youth), the growing wealth among new populations, particularly within the middle class, and more tolerance for new ideas and behaviours (Peltzer et al, 2010).

The complicated relationship between the aspirations of the youth, known as “the Mandela kids” in the new South Africa, which offers them hope and possibilities but where in reality they are faced with unemployment, shattered dreams and high crime rates, plays a role in substance abuse (September, 2013). As stated by UNODCCP (1999), these unfulfilled expectations and early disillusionment are considered by many as key factors that encourage experimentation with drugs among the younger generation.

Amongst poor township youths, the growing self – destructive culture of “izikhothane” has emerged (September, 2013). At specially organized gatherings, young people can flaunt their expensive brand name clothing, costly accessories and expensive alcohol. The burning of money and clothes is the highlight of an event characterized by binge-drinking, loud music and offensive language, and a crowd admiring every move made by the participants (September, 2013).

The reality behind this culture is the desperate poverty and debt of the “izikhotane” home in order for the youth to display a false sense of wealth and instant gratification, all for a moment in the spotlight and admiration from the crowd. This disjuncture between the promise of an attractive lifestyle and the desperate reality of the situation, combined with a search for identity amongst the youth, is fertile ground for substance abuse, with substances often providing an immediate escape (September, 2013).

2.10 Consequences of Drug Use

2.10.1 Crime and Violence
Globally, the relationship between illicit drugs and violence (associated with both supply and demand) has been documented, where the level of violence ranges from crimes committed by drug addicts for the sake of satisfying their expensive addictions (Ramorola and Taole, 2014); fighting between rival
drug gangs, up to the intimidation of the highest levels of national governments by traffickers (Ryan, 1997). This drug-related violence, which goes hand-in-hand with other forms of violent crime, can have a detrimental effect on the overall well-being of society as it is undermining the basic expectations of a safe and secure life for all (Ryan, 1997).

Figures published by SAPS show that drug abuse accounts for 60% of all crimes (Thomson, 2013) and nearly 1 in every 2 people that the police arrest are under the influence of some kind of drug (Raynard and Wolvaardt, 2006). It has been found that nyaope users constitute a substantial number of abusers as in 2012, in Gauteng alone, 25949 drug-related crimes were recorded, and nyaope users, most of them aged between 13 and 19 years, formed a significant part of this figure (Mayathula-Khoza, 2013).

Learner violence due to drugs is also rife in South African schools as students acquire drugs outside the school grounds, use it and then cause violence within and outside the school premises (Ramorola and Taole, 2014), which is now commonplace in South African schools (Zulu et al, 2004).

Ryan (1997) makes use of the three-dimensional, tripartite conceptual framework to explain the relationship between illicit drugs and violence in South Africa, where the level of violence ranges from fighting between rival drug dealing gangs to traffickers intimidating high-level government officials. Basically, the tripartite conceptual framework defines three dimensions to explain the relationship between illicit drugs and violence, namely:

**Psychopharmacological violence** - the suggestion is that people may act out violently or become excitable or irrational as a result of ingesting drugs. Also, drugs are used to increase confidence and minimise nervousness, which facilitates criminal activities (Ryan, 1997).

**Economic compulsive violence** - this dimension considers economic crime committed to obtain funds to purchase drugs for personal use that has a component of violence. These users are not driven to act out violently as the violence is generally the result of some extraneous event(s), such as the perpetrator's nervousness, unexpected reaction of the victim(s), intervening of bystanders and the presence of weapons on either the perpetrator and/or victim, with their sole purpose in committing a crime being to secure money for drugs (Ryan, 1997).

**Systemic violence** - is violence that is intrinsic to the lifestyles and business methods of those involved in the illicit drug market and can include something as simple as a dispute between two users sharing a drug; disputes over territory between rival drug dealers, and assaults and homicides committed within drug-dealing hierarchies as a means of enforcing normative codes (Ryan, 1997).
Adolescents who use substances are more likely to experience multiple violent acts when compared to those who don’t use, while those involved in criminal activities seem to be involved in using substances as well (Morojele et al, 2009).

2.10.2 ACCIDENTS AND INJURIES
When under the influence of alcohol and/or other drugs, there is an increased risk of unintended injuries, such as road accidents and fights (Morojele et al, 2009).

2.10.3 RISKY SEXUAL BEHAVIOUR
Under the influence of alcohol and/or use of other drugs, adolescents are more likely to be sexually active and more likely to engage in unprotected sex, which is associated with the consequences of falling pregnant, and/or contracting STIs, including HIV (Flisher et al, 2003; Morojele et al, 2006; Plüddemann et al, 2008a; Moodley et al, 2012). As substance use is reported to decrease adolescents’ inhibitions and safer sex negotiation skills, there is an increase in their already-present vulnerability to engaging in risky sexual behaviour (Morojele et al, 2006).

2.10.4 DROP-OUT AND ABSENTEEISM
In education, substance abuse is recognized as a major issue due to the increases in student drop-out rates (Flisher et al, 2003; Morojele et al, 2012; Plüddemann and Parry, 2012; Ramorola and Taole, 2014), increase in absenteeism, common misconduct, fighting amongst learners and general lack of concern for others (Nelson et al, 2010).

2.10.5 CHRONIC DISEASES
When the method of drug use is by injection, the re-use of infected needles (Myers and Fakier, 2007). High-risk sexual behaviour can lead to an increase in STI infections, which can be passed on to sexual partners and the babies of drug users (Moodley et al, 2012).

Among adolescents and young adults, the co-morbidity of substance abuse and other psychological disorders appears to be common (Visser and Routledge, 2007). When comparing individuals with a single disorder and those with a co-morbid disorder, co-morbid adolescents have a more chronic path, greater impairment in global role functioning and poorer prognoses, and they tend to be less responsive to treatment (Beitman et al, 2001).

2.11 HOW TO ADDRESS SUBSTANCE ABUSE PROBLEMS
Despite the fact that in South Africa drug production and distribution is punishable by law (Stares, 1996), drug production and use is on the increase (UNODC, 2004; Harker et al, 2008; Eberlein, 2011; Kalula and Nyabadza, 2012), thus the urgent need for prevention policies and strategies to control drug
use. To effectively address substance abuse problems in any country, it is important to recognise that the problems are complex and multi-factorial (Fabricius et al, 2007), and that substance use disorders, much like HIV/AIDS or diabetes, require social approaches for prevention and treatment, as well as medication and clinical interventions (SMART, 2008). But the main goal of any intervention strategy should be to reduce the supply and diminish the demand for illicit drugs (Ryan, 1997).

In order to be successful, it is of the utmost importance that all parties involved, i.e. the community, those in control of drug trafficking, those responsible for the treatment of drug abusers, as well as those involved in research and law enforcement, have to collaborate. The solutions should be based on the collective and individual responsibility, direct or indirect, of each party or actor involved in the design and implementation of research-driven, culturally relevant, community-based prevention and education programmes for the prevention of drug abuse (Rocha-Silva et al, 1995; van der Burgh, 1996; Ryan, 1997).

It is also important to recognize the nature of the drug problem and to analyze drug abuse in terms of the interactive and interdependent factors, namely the host, the agent and the environment. Where the host is the person along with their biological and psychological susceptibilities to drug use, and their knowledge and attitudes that influence their drug use patterns; the agent is the drug of choice, its characteristics, distribution methods and availability; and the environment is the setting in which drug use occurs together with the community ideals that shape drug use practices (Sheldon, 2013).

2.12 DRUG PREVENTION

The high prevalence rates of drug abuse, combined with medical and psychosocial consequences of using these substances (Moodley et al, 2012), is placing a heavy burden on the health and welfare system of South Africa, which is compounded by high levels of unmet substance abuse treatment needs (Parry et al, 2002b). This is particularly noticeable within the poor communities of South Africa (Myers and Fakier, 2007; Peltzer et al, 2010; Harker Burnhams et al, 2012).

But, following the opening address to Parliament by former President Nelson Mandela in 1994 (Mandela, 1994), where the South African problem with alcohol and drug abuse was highlighted, there has been a dramatic increase in the establishment of private treatment services (both licensed and unlicensed) (DSD, 2003; Ramlagan et al, 2010).

In Gauteng alone, during 2012 the government provided funding to 39 substance abuse treatment centres, of which 31 were out-patient clinics and eight were in-patient facilities, with a total of 28 432
clients accessing these treatment facilities (Mayathula-Khoza, 2013). For the 2013-2014 financial years, the government increased funding to 43 substance abuse treatment centres, to provide access for a total of 12 699 service users (Mayathula-Khoza, 2013).

2.13 INTERVENTION STRATEGIES IN SOUTH AFRICA

According to SMART (2008), it is commonly understood that substance use disorders occur along a continuum of severity, ranging from the occasional/recreational use, to misuse, to abuse, with the end stage being dependence (Figure 2.17). It is thus important that for any alcohol and/or drug prevention strategy the same pattern should be followed, ranging from primary prevention activities that ensure a disorder or problem will not occur, through secondary prevention activities (including early identification and management of substance use disorders through the provision of treatment), to tertiary prevention activities that aim to stop or retard the progression of a disorder (e.g. treatment, aftercare and harm reduction activities) as recommended by the WHO (UNODC, 2002a).

![Different stages of substance use and the appropriate intervention](image_url)

**Figure 2.17: Stages of substance use (SMART, 2008)**

Prevention activities specifically focus on (i) preventing the use or uptake of psychoactive substances, (ii) delaying the age at which substance use begins, and (iii) preventing problem use of legal substances such as alcohol (UNODC, 2002a; Harker et al, 2008). According to Harker et al (2008), it ranges from targeting individuals and their peers up to the level where prevention takes on the form of international treaties, conventions and other structural interventions.

In general, the South African prevention services can be classified into four categories. State or public sector non-profit organisations (NPOs) which are owned, managed and overseen by government, private for profit, and community-based organisations (CBOs) which provide social services at a local
level relying mainly on volunteer contributions for labour, material and financial support (Harker et al, 2008).

Looking at the prevention strategies in more detail:

2.13.1 PRIMARY PREVENTION
Primary prevention is to ensure that substance abuse does not develop (Kalula and Nyabadza, 2012). Included are all activities that prevent the initial psychoactive substance use amongst individuals and at risk groups that have not yet started using psychoactive substances. Also, to delay the onset of problematic substance use amongst individuals who use psychoactive substances occasionally, but do not yet display problems related to use (SMART, 2008; DSD, 2013).

Primary prevention programmes operating in school settings are among the most popular demand reduction strategies. They are often based on the assumption that the provision of information about the negative effects of drugs can deter young people from initiating drug use or from using a particular type of substance (e.g., heroin).

Despite generally negative findings from a number of studies of school, education and community-based prevention programmes, there is evidence that some approaches can delay the initiation of drug and alcohol use (Faggiano et al, 2005). Generally, the aim with primary prevention is to improve behaviour and social skills within the family or classroom environment rather than focus on drugs or drug use per se (Barbor et al, 2010).

2.13.2 SECONDARY PREVENTION
Secondary prevention, which includes brief counselling, is about early identification by screening for problematic substance use individuals, i.e. those who are starting to experience some problems related to substance use but have not yet become addicted and do not yet require formal treatment (SMART, 2008; Kalula and Nyabadza, 2012; DSD, 2013).

2.13.3 TERTIARY PREVENTION
Tertiary treatment is the provision of specialised medical, psychiatric and social services to individuals with substance use disorders with the aim of reducing substance-related harm (Kalula and Nyabadza, 2012). This is done by focusing on halting, reducing or reversing the negative health and social consequences associated with substance abuse and dependence (SMART, 2008; DSD, 2013).
When talking about substance abuse among young people, Harker et al (2008) and Morojele et al (2009) classify the prevention strategies depending on the nature and severity of the problem as follows:

2.13.4 UNIVERSAL PREVENTION STRATEGY
With universal prevention interventions, the general public or a whole population is targeted (Harker et al, 2008; Morojele et al, 2009). In South Africa, school-based educational interventions aimed at preventing the onset of substance abuse are the most common form of Universal prevention (Harker et al, 2008) as schools facilitate easy access to a large part of a young, vulnerable population (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2000).

2.13.5 SELECTED PREVENTION STRATEGY
Selected preventative interventions are aimed at specific subgroups of the populations whose risk of developing substance use disorders is significantly higher than the general population (Harker et al, 2008; Morojele et al, 2009). Truants, young people at risk of leaving school early due to falling school grades, drop-outs, young offenders and youth from neighbourhoods with difficult socio-cultural conditions are named as examples by the EMCDDA (2000).

The selected prevention interventions seek to reduce problems that could result from substance abuse. Morojele et al (2009) list some examples of risks and harm reduction interventions such as: crime and violence; road accidents and unintentional injuries (e.g. no drinking and driving); unwanted pregnancies (e.g. access to family planning programmes); STIs (e.g. condom distribution); scholastic problems (e.g. increased academic aspirations and performance) and mental health problems (e.g. by providing routine screening, early identification of mental health problems and early referral for treatment, as well as social and family support).

2.13.6 INDICATED PREVENTION STRATEGY
The indicated interventions are aimed at individuals who are exhibiting substance use-related problems and/or problem behaviours (Harker et al, 2008; Morojele et al, 2009).

2.14 TYPES OF PREVENTION SERVICES OFFERED IN SOUTH AFRICA
2.14.1 SCHOOL-BASED PREVENTION PROGRAMMES
As mentioned before, the most popular form of universal prevention in South Africa is school-based prevention as schools provide for easy access when young people are targeted (Harker et al, 2008). Included in these programs offered in the school settings are substance use interventions with follow-up sessions, once-off awareness raising activities, as well as the provision of vocational and academic
training as part of prevention among young people (Harker et al, 2008). Referrals for treatment also form part of the school-based prevention activities for the early detection of substance use disorders and to encourage help-seeking behaviour amongst young people (UNODC, 2002b). One such example is the integrated Anti-Substance Abuse Strategy initiative being run in Gauteng during school holidays, which include the “Ke Moja Drug Prevention Programme” (No thanks, I’m fine without drugs) (Mayathula-Khoza, 2013). Included in these programmes are home visits, school visits and counselling to enhance the resilience to drugs and to promote individual strengths with the aim of reducing or even eliminating the incidence of substance abuse in Gauteng (Mayathula-Khoza, 2013).

2.14.2 COMMUNITY-BASED PREVENTION PROGRAMMES
According to Loxley et al (2003), the target of community-based prevention is drug use directly as the initiatives attempt to change the behaviour of the users as well as addressing the issues, such as drug availability, that support and maintain drug consumption. When the prevention messages are consistent and community-wide, it is suggested that these initiatives enhance protective factors (Loxley et al, 2003).

Harker et al (2008) did an audit of the prevention programmes in South Africa and reported that 70% of the organisations that were investigated were offering community-based drug education services and 40% were offering drug education services for parents, while life skills programmes, vocational training services, youth sport and recreational activities, HIV/AIDS education and the link between HIV/AIDS and substance use were under-represented at the community level. Also, none of the organisations surveyed reported working to address the structural issues that support and maintain alcohol and other drug use in communities (Harker et al, 2008). In Gauteng, the community-based prevention programmes are yielding positive results because they enhance partnerships among key role players such as the SAPS, the community policing forums, non-governmental organisations (NGOs), Faith-Based Organisations (FBOs) and Local Drug Action Committees (Mayathula-Khoza, 2013).

2.14.3 MASS MEDIA AWARENESS CAMPAIGNS
Most (65%) of the South African organisations that were surveyed by Harker et al (2008) were making use of printed material as a means of creating awareness, while marketing (21%) on television and radio (50%) was pursued to a lesser degree. Some (39%) of the organizations were making use of shock tactics employing the use of extremely visual material, such as portraying death due to an overdose, to reinforce the message that drugs are dangerous, trying to prevent early initiation of substance use. This is despite the fact that research has shown that by exaggerating and by focusing on the extremely negative (but often rare) impact of substance use, the use of shock tactics as prevention rarely influences behaviour positively (UNODC, 2002b). Recently, the emphasis has shifted
more towards information-based programmes with a life skills component covering topics such as decision-making skills, self-esteem and peer pressure (UNODC, 2004).

2.14.4 CONTENT OF PREVENTION PROGRAMMES
The Harker et al (2008) audit found that the majority (91%) of the prevention programmes offered in Cape Town were educational programmes with the aim of preventing young people from misusing substances by providing them with knowledge about the available substances and their detrimental consequences (Foxcroft et al, 2003). Other services that were offered included: skills-based prevention programmes such as coping skills and peer pressure resistance skills aimed at enabling young people to avoid the use of drugs; and sessions where personal experiences of drug use are shared (Harker et al, 2008). Thus the key objectives of these programmes were to raise awareness of the consequences of substance use, to prevent the initiation of use among those not yet using alcohol and drugs, to address the specific risk factors related to substance abuse and to mobilise community action against substance use (Harker et al, 2008).

2.15 TREATMENT FACILITIES IN SOUTH AFRICA
Data from South Africa (SACENDU, 2012) indicates that first-time admissions to treatment centres have increased (Fellingham et al, 2012). In order to improve access to treatment facilities, attempts have been made to understand and improve the barriers (mainly structural) to service delivery (Myers et al, 2008), but it is also important to look at the quality and content of the treatment programmes being offered as the number of reported treatment failures are as high as 40% (Ramlagan et al, 2010). When talking about nyaope specifically, at one NGO in Tshwane 183 people was sent to rehabilitation for nyaope addiction during 2013 of which only 13 (7%) have not relapsed (Venter, 2014).

As reported by Knott et al (2008), it is worrying that although access to treatment is necessary, it is not sufficient for positive treatment outcomes. As with all the health behavioural theories, the theories that explain the motivations for drug use and abuse try to explain the intricacies of human nature based on our knowledge of factors such as societal and cultural pressure, individual factors and personality, human behaviour and environmental interactions, and combinations of these (Sheldon, 2013). There is the belief that in order for a drug treatment programme to be successful, those receiving help must want the help that is on offer (Connor et al, 2009), and also the recovery process would be more successful if the user is motivated to be in the treatment programme and actively engaged in their own intensive treatment recovery programme (Dryden-Edwards, 2014b).
In South Africa, there is increased demand for and limited access to substance abuse treatment (Harker Burnhams et al, 2012; Myers et al, 2012) given the high lifetime population prevalence estimates of 13.3% for substance use disorders (Herman et al, 2009). SACENDU (2012) also reported that first-time admissions increased from two-thirds to three-quarters, which could be attributed to an increase in either substance abuse problems or an increase in the number of individuals seeking treatment. Although the government is committed to the delivery of substance abuse treatment by allocating more money (it costs the state about R18 000 to put a single addict through rehabilitation [Ho, 2013]), by expanding the number of state-funded treatment facilities and by training additional health and social workers to deliver these services, there are still high levels of unmet substance abuse treatment needs, particularly within the poor communities of South Africa (Myers et al, 2010b).

2.15.1 TREATMENT OPTIONS
Treatment services in South Africa are either voluntary or statutory (SMART, 2008; DSD, 2013) and include the following options:

**Detoxification:** Detoxification is aimed at relapse prevention and is indicated when the user is experiencing uncomfortable withdrawal symptoms which could predispose him/ her to relapse and should always be followed by a more comprehensive in-patient or out-patient treatment programme (SMART, 2008; DSD, 2013).

**In-patient treatment:** A range of in-patient treatment services, which offer structured, professional, 24-hour therapeutic care, are available with variations in duration of treatment; the type of treatment model used (evidence-based treatment models or not); the experience, skills and qualifications of service providers, i.e. service providers with professional qualifications or support counselors; and the kinds of populations served (SMART, 2008; DSD, 2013). The different lengths of programmes that are available all depend on the specific needs and circumstances of the drug user. At the South African National Council on Alcoholism and Drug Dependence (SANCA) centres, the first step is to medically treat the user to help them to get off the specific drug/s that they are using, which is then followed by group therapy and individual therapy sessions with counsellors and therapists (SANCA, 2014). Re-integration into society after treatment also forms a big part of the treatment programme.

**Out-patient services and Community-based programmes:** Out-patient treatment programmes provide structured, professional, therapeutic care for individuals, families or groups with substance use disorders, allowing participants to return to their usual living environment after each counselling/therapy session (SMART, 2008; DSD, 2013). At SANCA, the out-patient follows a 12-week programme based on a holistic, systemic approach dealing with addiction in all areas of the user’s life, e.g. physical,
psychological, home, work, school, as well as the legal system (SANCA, 2014). Included in this programme are weekly individual sessions with the drug user, monthly medical examinations, and weekly distribution of medication and clinic visits (SANCA, 2014).

**Alternative sentencing, Statutory treatment and Diversion options:** As there is no formal Drug Court system in South Africa (SMART, 2008; DSD, 2013), some offenders of drug-related crimes can be given alternative sentencing, based on the discretion of the magistrate, where they are sentenced to a state inpatient treatment facility rather than a correctional facility.

Families can also commit individuals (statutory committal) to a treatment institution (usually a private inpatient centre), provided they have the necessary supporting clinical reports (SMART, 2008; DSD, 2013).

Diversion options are particularly suitable for young offenders where they voluntarily elect to be diverted out of the Criminal Justice System based on their agreement to complete an intervention programme. Though the Diversion programmes are regulated by the Department of Social Services, the intervention itself is overseen by the Department of Justice and, should the offender not be compliant, they can be taken back to court for the legal process to continue (SMART, 2008; DSD, 2013).

**Aftercare, support & reintegration services:** Aftercare, ongoing support and reintegration services are essential components of a successful intervention for individuals who have completed substance abuse treatment as it aims to provide individuals with additional tools that equip them to maintain their treatment gains, how to remain alcohol and/or drug free, how to avoid relapse and how to rebuild their lives and be reintegrated into society (SMART, 2008; DSD, 2013). In South Africa, there are various support groups (e.g. Alcoholics Anonymous (AA), Narcotics Anonymous (NA) and faith-based organisations such as Christian Action for Dependents (CAD) and Alcoholics Victorious; as well as secular organisations such as Toughlove that provide support for the person with the alcohol/drug problem as well as their families (SMART, 2008; DSD, 2013).

**2.15.2 COMMONLY USED SUBSTANCES OF ABUSE IN TREATMENT CENTRES**

Dada et al (2012) did a study to monitor the admissions for alcohol and drug abuse to South African treatment centres for the period 2008 - 2010 and data (SACENDU, 2012) suggests that the use and abuse of drugs other than alcohol is fairly common. But what is of concern is that the number of treatment admissions increased significantly since 2000 (Ramlagan, 2010). This increase is also supported by reports from SANCA (Plüddemann et al, 2008b).
In South Africa, the most commonly used substance of abuse in treatment centres was alcohol, followed by cannabis, crack/ cocaine, heroin/opiates, methamphetamine (tik), prescription/ over the counter (OTC) drugs and cannabis/mandrax (Ramlagan et al, 2010). Results from the SADENCU (2012) report as summarised by DSD (2013) for specific drugs are as follows:

**Cannabis**: Between 11,2% (Western Cape) and 50,2% (Mpumalanga /Limpopo) of patients reported this drug as their primary drug of abuse.

**Cocaine**: Between 1,9% (Western Cape) and 20,1% (Eastern Cape) of patients reported this drug as their primary drug of abuse.

**Heroin**: Between 0,3% (Central Region: Free State, Northern Cape, North West) and 29,5% (KwaZulu-Natal) of patients cited heroin as their primary drug of abuse. It is speculated that the comparatively high proportion of heroin abusers in KwaZulu-Natal could be the result of the use of "sugars" or nyaope (Dada et al, 2012).

**Tik**: Between 0,1% (KwaZulu-Natal) and 40,6% (Western Cape) of patients reported tik as their primary drug of abuse.

**OTC and prescription medication**: Between 0, 1% (Western Cape) and 12,3% (Eastern Cape ) of patients reported over the counter (OTC) /prescription medication as their primary drug of abuse.

**Alcohol use**: According to SACENDU (2007), alcohol was still the most common primary substance of abuse among patients seen at specialist treatment centres across all sites (except in the WC), accounting for 52% of admissions in Gauteng Province (GP), 50% of admissions in KwaZulu-Natal, 44% of admissions in Mpumalanga and 62% of admissions in the Central Region (Free State, Northern Cape and North West). The mean age of patients whose primary substance of abuse was alcohol ranged from 36 to 41 years across all sites (Ramlagan et al, 2010).

### 2.15.3 BARRIERS TO TREATMENT

Some of the barriers to treatment entry for many South Africans are:

**Location**: The geographical location of existing services, where the cost (Harker Burnhams et al, 2012) associated with travelling to distant services is affecting marginalised communities (Morojele et al, 2009).

**Access to treatment**: As there are few free services available, the costs associated with paying for treatment is a barrier for many in a country where poverty and unemployment is high (Harker Burnham et al, 2012). This is supported by Myers and Parry (2005) who reported that the race profile of clients at
treatment facilities does not reflect the demographic composition of the general population; with Black persons remaining underrepresented despite high levels of substance-related problems within Black communities. This profile is suggestive of limited access to treatment rather than lower levels of substance use within these population subgroups (Myers and Parry, 2005).

**Type of facility:** Ramalagan et al (2010) reported higher drop-out rates at out-patient-based facilities when compared with in-patient-based facilities due to the fact that there is a bigger chance for out-patients to be influenced before they complete the treatment.

**Stigma:** Perceived stigma towards substance users has been identified as a significant barrier to treatment use, with individuals who need help tending to deny or hide their condition for fear of being negatively labelled, e.g. where female substance abuse is generally associated with sexual availability and an inability to fulfil traditional gender roles (Myers et al, 2009).

**Myths:** When potential clients have the faulty notion that a single treatment episode is sufficient to cure substance dependence, there will be concerns on their side about the effectiveness of the treatment on offer as they might believe that treatment does not work (Myers et al, 2009). This is worrisome as recovery is a lifelong process which often requires several treatment episodes and clients are leaving treatment prior to completion (Brewer et al, 1998).

**Quality of service:** There could also be real concerns about the quality of services available to individuals as well as how confidential the treatment really is (Myers et al, 2009). The fact that there is no legislation that regulates and oversees the training, qualifications and competencies of primary prevention service providers (Harker et al, 2008), and that there are also no minimum norms and standards to guide prevention interventions (SMART, 2008), could have an impact on the quality of the substance use prevention offered in the treatment facilities in South Africa.

**Belief:** There is a commonly held belief amongst clients that treatment is a form of punishment. This is due to the concerns of addicts about their lack of choice on which programme to follow and their loss of freedom while in the programme (Myers et al, 2009).

**Structural factors:** Structural factors, such as the competence and attitude (e.g. judgemental) of staff responsible for treatment service delivery, the proliferation of unregistered and unregulated treatment facilities in the private sector, the limited use of evidence-based treatment models, the use of unskilled and untrained staff to deliver treatment services, and limited capacity to provide a comprehensive range of treatment services, impact negatively on service delivery (Myers et al, 2009).
Role of the media: The media is often guilty of not representing the treatment facilities in a positive light by only focusing on the sensationalistic and newsworthy items, resulting in negative perceptions by the public about the existing substance abuse services (Myers et al, 2009).

2.16 DESIRABLE FEATURES OF TREATMENT SERVICES/ PREVENTION PROGRAMMES
No single treatment programme is appropriate and suitable for all individuals, families, target groups or communities. In order to be successful, the treatment services have to be user-centered by adapting to the diverse and multiple needs of the individuals, vulnerable groups and target communities for whom the programmes have been developed (SMART, 2008; DSD, 2013).

Some other factors that need consideration are:

Respect the need for, and value of, client choice: By involving clients actively in treatment planning and by giving them choices about their treatment goals and the types of services available will increase treatment effectiveness as most clients have some sense of which strategies are likely to work best for them (Horvath, 2011).

Offer individualized treatment: Although most programmes are dominated by the group addiction treatment approach of one-size-fits-all, or the “12 steps” recovery programme (Recovery, 2014), many clients would benefit from having a one-on-one treatment session (Horvath, 2011).

Age-appropriateness: Programmes have to be adapted so that it is appropriate for the specific age group targeted (e.g. children or older persons) to ensure comprehension, taking into account age-appropriate pace and content (SMART 2008; DSD, 2013).

Gender sensitive: Special services should be provided for female service users, including trauma-related services and child care, and match female service users with female counsellors for a better outcome (SMART 2008; DSD, 2013).

Culturally appropriate: Cultural sensitivity, defined by Resnicow et al (2000) as “the extent to which ethnic/cultural characteristics, experiences, norms, values, behavioural patterns, and beliefs of a target population as well as relevant historical, environmental and social forces are incorporated in the design, delivery and evaluation of targeted health promotion materials and programmes” is one of the most widely accepted principles of public health interventions. Community needs have to be integrated with evidence-based practices which respect cultural diversity in order to promote sustainability for treatment
interventions (Harker et al, 2008). In South Africa, many clients find it difficult to adhere to the programmes offered due to the language barriers they experience in English- or Afrikaans-medium programmes, as few programmes employ African-language speaking counsellors or translators (Myers et al, 2004).

Also, as most of the programmes are developed in Western settings but offered to Black South Africans, the cultural appropriateness becomes questionable (Myers et al, 2004). Although it is important that the interventions must be research-driven (Ryan, 1997), based on internationally accepted principles and evidence guided by theories and models of prevention and behaviour change, South African norms and standards should be taken into consideration (SMART, 2008; DSD, 2013).

**Length and timing of treatment:** The current system in South Africa focuses on people with the most severe substance use disorders and then treatment is applied according to a preconceived formula (e.g. 28 day), while those at the early stages of substance misuse and less severe substance use disorders are often ignored (Horvath, 2011).

**The role of the environment:** As reported by Kao et al (2014), the accessibility of drug treatment services is not only a function of individual characteristics of the user, but the environment also plays a role in the capacity or willingness of the user to utilize the services that are offered. It is thus very important to consider the ecological factors as well as the personal characteristics of the user when studying the treatment outcomes (Jacobson, 2004). The availability of drugs in the neighbourhood and the available community resources are important factors that have an influence on the treatment outcomes and relapse of the drug user that have to be taken into account (Jacobson, 2004).

**Staff qualifications:** The staff that is providing substance abuse treatment services must be qualified in order to be able to provide the specialized services that are needed since most clients in the treatment system are likely to have comorbid conditions also requiring mental health intervention (Horvath, 2011).

**Removal of barriers:** Barriers to treatment, such as access, lengthy waiting lists, high costs and negative perceptions about the effectiveness of treatment, should be limited (SMART, 2008; DSD, 2013).

### 2.17 CONCLUSION

The causes influencing drug use and abuse are very complex as individuals use drugs at different ages, under different conditions (Sheldon, 2013) and for different reasons. When striving to develop a
comprehensive, effective and sustainable strategy for the prevention and management of substance abuse, it is important to recognize that the problems are complex and multi-faceted requiring a multi-sectorial, holistic, research-driven approach with stakeholders involved in the control of drug trafficking, the treatment of drug abusers, as well as those involved in research and law enforcement, all working in close collaboration (Morojele et al, 2009; Kalula et al, 2012; Ryan, 1997).

The concept LOC is used to describe a person’s perception about who is in control of their lives. As stated by Rongen et al (2014), an individual’s internal LOC is an important factor that can positively influence his/her participation in a rehabilitation programme and increasing a person’s internal LOC might be a promising way to improve positive health behaviour and participation in treatment rehabilitation programmes. Although LOC is considered to be a stable personality trait (Rotter, 1966), studies have shown that it is possible to increase a person’s internal LOC (Moshki et al, 2012).

Currently, there are no known nyaope-specific behavioural rehabilitation programmes (Mokwena and Fernandes, 2015), but once there is an understanding of the role that the LOC of the nyaope user plays in relation to the individual perception and personal chances of rehabilitation, the treatment intervention programme could be adopted to suit individual characteristics, increasing the chances of success and recovery. From the Mokwena and Fernandes (2015) study, the confirmatory statements that were received from the participants, indicating that stopping nyaope use was related to their determination was an encouraging starting point for this current study. Furthermore, focusing on the internal LOC in the treatment programme will encourage self-management and empowerment.

As the typical nyaope user is between 13 and 19, successful intervention is of the utmost importance as it influences the lives of future leaders and South African society as a whole. Thus the aim of this study was to explore and describe the role and extent to which the drug user’s LOC influences the use of nyaope in Gauteng as an understanding of the problems that nyaope users experience could be used to design effective interventions based on evidence, saving South African youth from a life of desperation and no future.
CHAPTER 3: METHODOLOGY

3.1 INTRODUCTION
This chapter outlines the research design and methodology that was used, the study population from which the samples were drawn, selection criteria used, data collection tools, the data collection processes, data analysis procedures and ethical considerations.

3.2 STUDY DESIGN
The design of this study was a cross-sectional, inferential, mixed-method design. The quantitative aspect which guided the study was dominant, with a less dominant qualitative aspect also in the design (Creswell, 2013). With this design, quantitative and qualitative data was collected concurrently (Bamberger, 2013) and the data was integrated in the interpretation of the overall results. The purpose of the qualitative data was to support the findings of the quantitative method (Creswell, 2003; Creswell, 2013) in the analysis of the role of the LOC amongst nyaope users. This study design could also be described as concurrent triangulation where two methods are used concurrently to confirm, cross-validate or corroborate findings within a study (Creswell, 2003; Velez, 2008).

Mixed-methods approaches, when used systematically, offer the potential to combine the benefits of both the qualitative and quantitative approaches while compensating for the limitations of both approaches when used in isolation (Bamberger, 2013). Questionnaires and interviews, as used in this study, are often used together in mixed-method studies (Harris and Brown, 2010) where the questionnaires are usually viewed as a more objective research tool that can produce generalisable results because of larger sample sizes, while the interviews provide contexts where participants can be ask for clarification, to elaborate on ideas and to explain perspectives in their own words (Bamberger, 2013).

The biggest advantage of the mixed-method approach is the fact that when making use of data triangulation the researcher’s claims for validity and conclusions drawn on the LOC orientation of nyaope users are strengthened (Johnson and Onwuegbuzie, 2004, Velez, 2008). Also, in the context of drug abuse, qualitative research methods have gained importance due to their capacity to expose the hidden worlds of the drug users by actively listening to people and recording what they say about their lives, providing in-depth understanding of the way respondents perceive and interpret their world and
behaviours related to drug use, thereby complementing the quantitative methods of data collection (Carlson et al, 1995; Velez, 2008).

3.3 STUDY POPULATION
The population consisted of nyaope users, both male and female, who have been admitted to drug rehabilitation centres in Gauteng as well as the nyaope user in the street.

*Inclusion criteria*
- Nyaope users who were admitted to rehabilitation centres in any of the 6 regional districts in Gauteng.
- Nyaope users found on the streets in any of the 6 regional districts in Gauteng.
- Nyaope users who were 18 years and above.
- Nyaope users who consented to participate in the study.
- Nyaope users who were *compos mentis*. The understanding and decision-making capacity of the users (*compos mentis*) were judged by their capacity to read the consent form, ability to understand the communications that took place, including the ability to ask questions about aspects related to the study that they did not understand (WiseGEEK, 2015).

*Exclusion criteria*
- Nyaope users who were younger than 18 years of age.
- Nyaope users who did not consent to participate in the study.
- Users who were found not to be *compos mentis*, i.e. they were not alert and did not understand the purpose and procedures of the study.

3.4 STUDY SITES
Drug rehabilitation centres that were in any of the 5 regions in Gauteng (Tshwane, West Rand, Ekurhuleni, Johannesburg and Sedibeng) and registered and funded by the Gauteng Department of Social Development were included in this study. The final list consisted of out-patient rehabilitation centres located in Tembisa, Ebony Park, Soshanguve and Hammanskraal, as well as the Dr Fabian and Florence Riberio Treatment Centre in Cullinan, which caters for in-patients. The respondents that were recruited from the streets were from the urban areas of Ga-Rankuwa, Soshanguve and Hammanskraal.
3.5 SAMPLING
Sampling of convenience was done as all in-patients who were admitted to the rehabilitation centres, who had nyaope as a primary drug of abuse, were able and willing to participate and who fit the inclusion criteria were included in the study. For the participants who were recruited from the street, due to the distinct characteristics of a nyaope user, the researchers made use of purposive snowball sampling where the individuals were selected on the basis of information obtained from other selected members who verbally confirmed that they were nyaope users. Research assistants indigenous to and intimately familiar with the targeted population of nyaope users were hired to assist in the identification of possible participants and data collection.

3.6 SAMPLE SIZE
Statistics received from the SA National Council on Alcohol and Drug Dependence Thusong Centre in Mamelodi showed that from January 2012 to February 2013, a total of 83 people taking heroin, dagga and nyaope sought help at the Community-based Outpatient Help Centre in Mamelodi East (Mayathula-Khoza, 2013). Based on this information the estimated population size for the 10 selected facilities for a year was 830 (i.e. 10 facilities x 83 clients per facility per year). As data collection was expected to continue for a minimum of six months, the estimated study population was then 415, which is about seven nyaope users per facility per month. At a 5% margin of error, a 95% confidence level with a 50% response distribution, the total of 201 participants (Raosoft, 2004) was increased to 210 to adjust for non-response and included in the quantitative arm of the study for the six-month period of data collection. For the quantitative arm of the study, a census of all in-patients who were admitted to the rehabilitation centres for the use of nyaope were included in the study until the sample size was reached. The final sample size of 221 was reached after four months of data collection.

For the qualitative aspect, a total of seven focus group discussions (FGDs) with an average of six participants per group were conducted amongst the nyaope users from the rehabilitation centres. A total of 18 in-depth interviews (IDIs) were conducted, mainly from the participants who were recruited from the street, as it was not practical to wait until there were enough people to form a focus group. A total of 63 individual participants participated in the FGDs and IDIs. Data collection continued until data saturation was reached.

3.7 DATA COLLECTION TOOL
For the quantitative data collection, a structured interview guide with a set of pre-designed questions (Carlson et al, 1995) available in English (Appendix 1) and translated into the local language, Setswana
(Appendix 2), was used to describe what influenced the participants to use nyaope, how it affected his/her life and what they believe could be done to help them to stop.

The structured, self-administered questionnaire was an adaptation of previous validated questionnaires that were used in two other studies (Hall, 2001; Ersche et al, 2012), both designed to test drug-related LOC beliefs, as well as a questionnaire that was developed to be used for drug-use surveys (WHO, 1980). The original questionnaire was a 6-page data collection tool comprising 57 questions, which was divided into 3 subsections which included questions on the demographic characteristics of the participants, the substances that they have used/abused and questions to determine their LOC orientation. The drug-related LOC scale was a 31-item, forced-choice measure between two statements, with one statement indicating an internal control belief (e.g. “I can overcome my urge to use drugs”) and 1 statement indicative of an external control belief (e.g. “Once I start to use drugs I can’t stop”). Participants were instructed to choose the statement in each pair that most accurately described their current beliefs related to their own drug-use control expectancies in a variety of drug-use-related situations.

After the pilot test, where 10 participants recruited from rehabilitation centres completed the questionnaire, it was found that the questionnaire was too long and that the language that was used was not suitable for the respondents, many of whom had low literacy levels as they did not complete high school. After discussions between the supervisor and the researcher, the original questionnaire was adapted to make it shorter by choosing 13 statements that were specifically related to LOC. The statements were rephrased to make it simpler by using fewer words and a language that is more acceptable for the man in the street (Appendix 3). For those participants who still found it difficult to complete the questionnaire, research assistants were available to assist. Seven of the questionnaire statements were tested for external LOC and six for internal LOC.

The qualitative data collection tool was a semi-structured interview guide that was available in English (Appendix 4) and translated into the local language, Setswana (Appendix 5), and was used to describe what influenced the participant to use nyaope, how it affected his/her life and what they believed could be done to help them to stop. A semi-structured interview relies on a fixed set of questions but also allows the respondents to answer in their own words, with the interviewer able to prompt the respondent for clarification, contributing to rich data (Sankar and Jones, 2008).

This interview guide was developed to ensure that the questions would be able to address the research question, that the questions were relevant, comprehensible and interesting to participants, as well as linguistically and culturally appropriate (Simon and Mosa, 2008). The sequence of the questions was
also important, with the more complex or controversial questions asked after participants had a chance to develop confidence and rapport among themselves and with the moderator (Simon and Mosa, 2008).

After each round of data collection, the audiotapes and/or transcripts were reviewed. This allowed for the evaluation of the quality of interaction and responses given in the focus group and assisted in continuous assessment of whether the data collected was relevant (Simon and Mosa, 2008). There were also debriefing sessions immediately following a FGD or IDI between the moderator and research assistants where the experience and observations were discussed and suggestions offered for future data collection (Simon and Mosa, 2008) and, if need be, the tool was adapted in order to elicit more answers related to LOC specifically (See Appendix 6 for the final qualitative tool).

3.8 DATA COLLECTION
For the clients at the rehabilitation centres, arrangements were made with the Chief Executive Officers of the different centres to collect data on a predetermine day. On the arranged day the participants were asked to assemble in a specific room where the purpose of the study was explained, including that there were no right or wrong answers. Participants were given an opportunity to ask questions and any concerns regarding the study were clarified. Those who fit the inclusion criteria and who were willing to participate were given consent forms (Appendix 7 English version, Appendix 8 Setswana version) to sign, while those who declined were free to leave the room or just not participate. For the man in the street (not in rehabilitation), the research assistants approached the characteristic nyaope users (unkempt and uncaring about their outward appearance) and, after confirming that they were users, they were asked to voluntarily participate. The researchers also made use of informants and NGOs that were working with nyaope users in the community. A pharmacist in Soshanguve, who was working closely with nyaope users, made a room available in the pharmacy where data collection took place.

For both groups, the self-administered questionnaires were distributed by research assistants who were present to deal with any questions that did arise or to help translate or explain the meaning of words that the participants did not understand. Those who were not able to complete the questionnaires themselves were assisted by the research assistants who could converse with the participants in their home language and were trained in interviewing skills. Completed questionnaires were scanned for incomplete responses and were given back to participants for completion before final collection.

The completion of the questionnaire by the participants for the qualitative aspect was either by FGDs or IDIs, depending on the numbers available at any one time. If the participants were willing to participate
in both the qualitative and quantitative arm, they were included in both as the questions asked were not the same. A total of seven FDGs (45 participants) and 18 IDIs were conducted, which represents approximately 29% of all the respondents who participated in this study.

On average, the focus groups consisted of six individuals, the interviewer and two moderators who were fluent in indigenous African languages, were able to understand the nuances in the different local languages and who were able to encourage the participants to talk about themselves. Before the discussions took place, the ground rules were described and agreed on and the participant’s permission was asked to record the interview with a digital voice recorder.

The FDGs or IDIs continued until the point of data saturation, where no new information was coming forward. On average, the discussions for both IDI and FGD lasted between 30 to 45 minutes. The demographic data of the participants was collected by means of a self-administered questionnaire (Appendix 9) after the IDIs or FGDs took place.

### 3.9 DATA ANALYSIS

#### 3.9.1 QUANTITATIVE ASPECT

Only those participants who completed all 13 statements (100 %) with regard to LOC were included in the final analysis of LOC. The LOC questions were designed so that clients with a higher/more internal LOC would produce scores nearer to 13, while those with a higher/ more external LOC would produce scores nearer to 26. The final LOC score was computed by adding the scores obtained for the 13 questions. All scores of 19 and less (halfway mark between the possible final scores ranging from 13 to 26) were taken as an indication of an internal LOC orientation, while scores of 20 and above were taken as an indication of an external LOC orientation.

Though the researcher made used of a pre-validated questionnaire, the reliability and internal consistency or the extent to which all the questions in the tool measured the same concept or construct (LOC in this case), was tested using Cronbach’s alpha, which when calculated was $\alpha = 0.56$. When there is a low correlation between the items in the questionnaire, the variance between the items will be low; and the internal consistency between the item scores will be low. In the case of nyaope addiction, there were many factors (variables) that could influence the LOC score and the fact that there were no right or wrong answers could have been the reasons for the low alpha score. Although an alpha score of 0.56 is considered to be acceptable but weak (Sijtsma, 2009), the quantitative results were supported in this study with the verbatim quotes of the respondents in order to increase the validity of the quantitative data collection tool.
The raw data set was evaluated, cleaned and the complete data set was captured on Microsoft Excel before importation into Epi Info for analysis. Demographic data and substance abuse were analysed descriptively making use of univariate analysis. In some cases bivariate analysis was used, e.g. the use of nyaope by age. The chi-square tests were done to find out if there were any relationships between the dependent variable (LOC) and the five independent variables, namely: gender, institution, educational status, religion and employment status).

Logistic regression was used to explore any associations between nyaope addiction and the demographic and social variables, with an alpha level of 0.05 set for all statistical tests. For logistic regression, no assumptions were made about the distribution of the independent variables as they do not have to be normally distributed, linearly related or of equal variance within each group (Kyei and Ramagoma, 2013).

3.9.2 QUALITATIVE ASPECT
The digitally recorded data from the FGDs and IDIs was transcribed verbatim in the language that the participant chose to respond in, and transcripts were reviewed for errors by the research assistants who conducted the interviews. The transcripts were then translated into English and typed into Microsoft Word before being transported into the qualitative data analysis (QDA) computer software package NVivo version 10 for analysis.

The transcripts were read multiple times to initiate the development and defining of codes, which was the initial step in the development of a codebook with related definitions of each code. The principles of content analysis guided the development of the codes, and the codebook was modified until completion of the analysis.

The textual data was systematically categorized through the application of inductive codes, which were applied to all the transcripts. The reorganization of the code data into manageable segments allowed for the drawing and verification of conclusions in this particular context of nyaope use. The themes or codes that emerged from the conversations were defined, described and modified continuously in order to ensure consistency in the process of coding when applied to all the transcripts.
3.10 TRUSTWORTHINESS, RELIABILITY, VALIDITY AND BIAS

3.10.1. TRAINING OF RESEARCH ASSISTANTS
The research assistants were trained on the purpose of the study, how to obtain consent from participants, how to conduct interviews professionally and ethically, and how to guide participants in the completion of the questionnaires. The training sessions included mock interviews, which familiarized the research assistants with the interview guide so that they were able promote optimal interaction among participants, to keep their discussion from straying, and be able ask pertinent follow-up questions or probes if the participant responses were not clear. Interviewers were trained on the importance of ensuring that the interview occurred with as much privacy as possible, and the importance of confidentiality in the data collection process. Care was also taken to ensure that the interviewers were matched to the participants that they were interacting with in terms of age, gender and ethnic background (i.e. young, black males). It was expected that if the respondents were to be able to relate to the interviewers, it would create greater openness from the side of the participants.

3.10.2 TRUSTWORTHINESS OF THE QUALITATIVE ASPECT OF THE STUDY
Trustworthiness refers to how accurately the researcher interpreted the participant's experiences with reference to nyaope addiction and was achieved by both data and methodological triangulation, where data was collected from different study sites, townships, from males and females and from clients at rehabilitation centres, as well as the nyaope users who were recruited from the street. Trustworthiness provides evidence that descriptions and analysis reported by the researcher are in fact the truthful representation of the responses from the study participants, rather than the opinion of the researcher. In qualitative studies, trustworthiness is dependent on credibility, dependability, conformability and transferability.

Credibility, which parallels internal validity in quantitative research, refers to the extent to which the researcher accurately represented what the participants think, feel and do. It also refers to the confidence one can have in the truth of the findings. In this study, credibility was accomplished by the verbatim recording of what the participants said, which accurately represented what the participants think, feel and do. This was further achieved by making use of relevant probes, obtaining detailed field notes, and careful observation and documenting the non-verbal communication from the participants.

Credibility was also enhanced by the adoption of well-established interviewing skills by the research assistants, as well as the fact that the research assistants were familiar with the culture of the rehabilitation centres as they had done data collection at these institutions for a previous study.
Triangulation.

**Data triangulation** was achieved by collecting data from different study sites and different townships, by interviewing both males and females, and collecting data from participants in rehabilitation centres as well as those recruited from the street.

**Methodological triangulation** was achieved by collecting data from both FDGs and IDS, although it could be argued that FGDs and IDIs inherently possess common methodological shortcomings since both are interviews of a kind and their distinct characteristics also result in individual strengths as the use of different methods compensates for their individual limitations and exploits their respective benefits (Shenton, 2004).

**Strategies to help enhance honesty in informants.** All the potential participants were given the opportunity to refuse to participate in this study in order to ensure that data was only collected from those who were genuinely willing to participate and who were prepared to offer data freely. It was emphasized that participants had the right to withdraw from the study at any point without any explanation. From the onset, it was indicated that there were no right or wrong answers (as was indicated on the questionnaire as well). As neither the researcher nor the research assistants had any affiliation with any rehabilitation centres, participants were able to share their experiences without them fearing the loss of credibility in the eyes of managers or employees of the centres.

**Debriefing sessions** were held between the researcher, the research assistants and the supervisor. This was done in order to explore the experiences and perceptions of all involved in the study. Simultaneously, these sessions were used to discuss the effectiveness of the methods employed and possible alternative approaches.

**Dependability**- parallels reliability in quantitative studies and refers to the stability of the findings over time (Shenton, 2004). Dependability was enhanced by providing a detailed and thorough explanation of how the data was collected and analysed. This was accomplished by making use of a good quality, digital audio recorder and by transcribing the interviews verbatim. After prolonged engagement with the data, Nvivo 10 was used for data analysis as it is thought by some that qualitative data software adds rigour to qualitative research (Welsh, 2002). Furthermore, dependability was enhanced through the use of “overlapping methods”, i.e. collecting data by means of FDGs and IDIs.

**Confirmability** parallels the criterion of objectivity in quantitative research, and it refers to the internal coherence of the data in relation to the findings, interpretations and recommendations. In order to
reduce the effect of researcher bias, triangulation (as described above) was applied in this study where the same research problem was examined qualitatively as well as quantitatively.

**Transferability** (in preference to external validity/generalisability) is concerned with the extent to which the findings of one study can be applied to other situations (Shenton, 2004). By documenting (having an audit trail) and providing sufficient detail of all the procedures used covering the recruitment of participants, how the FGDs/IDIs were conducted, the decisions and conclusions that were made during data analysis so that other researchers could follow the same procedures if they want to conduct a similar study, provided that the situation and population fits the specific context of this LOC study.

### 3.10.3 RELIABILITY (QUANTITATIVE ASPECT)

Published questionnaires (WHO, 1980; Hall, 2001; Ersche et al., 2012) that were specifically used as self-reported measurement of LOC orientation amongst drug users formed the basis of the data collection tool. The evidence of the validity and reliability of these published instruments gave the researchers the confidence to use these instruments in the South African setting as they had been used in national and international studies.

The questionnaire was pre-tested and pilot tested in order to enhance and ensure the clarity of the questions and to determine if the measurements were accurate.

For the questionnaire, quality and consistency was achieved by asking close-ended questions in plain and simple language.

In drug surveys, it is often difficult to establish the validity of the data obtained as drug addiction behaviour is often of a private and often illegal nature, but in the context of this study, most of the participants were in a rehabilitation programme and had already openly declared that they had been using nyaope. Moreover, nyaope users are mostly found in groups and how they differ with the typical drug users is that they almost always acknowledge their addiction. Their group behaviour also assists in their acknowledging their addiction and being willing to provide information that they think will assist the researcher to get help for them. The reliability and consistency of the data obtained for the LOC was tested by triangulation, analysing and comparing the data obtained from the three different data sets (the FDGs and IDIs as well as the questionnaire).

### 3.10.4 VALIDITY (QUANTITATIVE ASPECT)

Validity is the degree to which a survey actually measures the phenomenon it sets out to measure (Alexander and Wynia, 2008). In this study, the following measures were taken to ensure the validity of the study:
● **Face validity**

Face validity refers to the degree to which the questionnaire subjectively appears to measure the LOC that it is supposed to measure. The questionnaire was given to various peers, School of Health Care Research Committee [SREC] and the Medunsa Research and Ethics Committee [MREC]), who had to judge if the questionnaire measured what the researcher intended it to measure. The supervisor has also conducted studies on nyaope and her input into the face validity of the questionnaire was of value.

● **Content validity**

Content validity refers to how well the items examined represent the important content of the domains of interest (Alexander and Wynia, 2008). The researcher made use of published pre-validated LOC tools that were developed specifically to test for LOC amongst drug addicts.

### 3.10.5 BIAS

Bias is a form of systematic error that can affect scientific investigations and distort the measurement process, which could lead to over- or underestimates in the LOC measurements. Some of the forms of bias that were considered in this study were:

- **Socially desirable response bias**

  Due to the distinct characteristics of a nyaope addict, i.e. a person who doesn't care for their outward appearance displaying physical and physiological symptoms, it was very difficult for the participants to deny the fact that they had an addiction problem. Furthermore, although it could be argued that a person such as a drug addict might want to present themselves in the best possible light, there were not any questions in the questionnaire where the respondents could have influenced the results by the over-reporting of desirable behaviours and under-reporting of undesirable behaviours. Participants were made aware of the fact that there were no right or wrong answers and were ensured of confidentiality and anonymity when participating in the study. The possibility that the participants did not tell the truth in order to prevent embarrassment was reduced by making the questionnaire anonymous.

- **Recall bias**

  This could have been a problem as the respondents were asked questions about their drug use in the past. But as recalling an event did not form the main part of this study, recall bias should not influence the results related to LOC.
• **Non-response bias**
  This type of bias was introduced into the study due to the systematic differences between respondents and non-respondents. It was suspected that those who chose not to participate in this study were on a high and thus not *copis mentus* and did not fit the inclusion criteria in any case. The sample size was increased to compensate for non-response bias.

• **Researcher bias**
  This was minimised through triangulation where the participants had the opportunity to give information about their stance to LOC with two different methods without influencing the underlying premise of the researcher (James and Slater, 2014), and by peer debriefing where a colleague facilitated the analysis and interpretation of the qualitative data.

• **Selection bias**
  This was controlled by conducting a census of all clients in the rehabilitation centres. Attempts were made to recruit the same number of users from the rehabilitation centres as from the street due to the expectations that users in a rehabilitation programme should have a higher internal LOC orientation.

### 3.11 ETHICAL CONSIDERATIONS

Ethical clearance was obtained from SREC and MREC (Appendix 10). Before conducting the study, permission was also sought from the Gauteng Department of Social Development (Appendix 11) and obtained (Appendix 12). A letter was also written to the SANCA management of the rehabilitation centres (Appendix 13) and approval was obtained (Appendix 14).

At the outset of the study, all potential respondents were informed that their participation was voluntary, without any coercion and that participation would not affect their eligibility to receive rehabilitation services as they had the right to choose whether or not to participate. Together with voluntary participation goes signing of a consent form (Appendix 7 and 8) in which the guidelines of the study as well as the role of the researchers and participants were described.

The FGDs and IDs made use of fictitious names and numbers in order to link the demographic data with the data that was obtained qualitatively from the participants. All interviewers received strict instructions about the importance of maintaining confidentiality. Any information that could link the participants to their responses was kept confidential under lock and key. Particular care was taken during the presentation of the research findings that the information presented would be sufficiently aggregated to ensure that no participant could be identified. The respondents were made aware that
the interviewer was only there to ask questions and not to provide any counselling or humanitarian assistance as it is offered by the rehabilitation centre.

Although the researcher took the necessary steps to keep the information obtained from the FGDs and IDIs confidential, the problem was that there was no control over the participants participating in a FGD sharing the information with others outside the group once the focus group was over. Despite the fact that for those who were in rehabilitation the sharing of information was a part of the process of rehabilitation, participants were assigned numbers and first names (or pseudo names) were only used in IDIs in order to overcome the problem of confidentiality and privacy of information shared amongst the group. Also, before the onset of the interviews the participant/s was/were again reminded that what was said during the discussion must remain in the group (Simon and Mosa, 2008).

3.12 CONCLUSION
This chapter provided a description of the research methodology that was used in this study. The study setting, design, population, sampling, data collection and tool, data analysis, validity and ethical considerations were discussed. The results of the study will be presented in the next chapter.
CHAPTER 4: RESULTS

4.1 INTRODUCTION
This chapter presents the results of both the qualitative arm (FGDs and IDIs) and quantitative arm (questionnaires). The qualitative data was analysed through thematic analysis obtained by using the NVivo software. Descriptive statistics were used to summarize and present the quantitative data. All data analysed was categorised according to the theoretical framework of Bronfenbrenner’s Ecological Model (Bronfenbrenner, 1993).

4.2 PILOTING DATA COLLECTION
The main data collection process was preceded by a pilot study on 17 respondents. The aim of the pilot study was to test the usability of the interview guide and questionnaire; and to identify any logistical challenges that may apply. The findings of the pilot study were the following:

The initial plan was to collect data from nyaope users who were admitted to rehabilitation centres, but because there were not many of them who use rehabilitation centres (as the financial implications for treatment is not an option for most), the study settings were expanded to also include participants that were recruited from where they usually assemble (e.g. parks, shopping centres etc.).

The results obtained from the 17 respondents of the pilot study indicated that some found the quantitative questionnaire intimidating and difficult to understand. This was modified to make it more user-friendly by deleting the researcher’s codes to the answers and by rephrasing and presenting the questions in a language that was more suitable for the participants (Appendix 3).

Following these modifications the questionnaire was found suitable for use.

The in-depth interview and focus group guide were constantly modified during the data collection process by adding probes and follow-up questions.
4.3 RESPONSE RATE

**Qualitative arm:**
A total of 18 IDIs were conducted and seven FGDs, with on average of six participants per FGD, and a total of 44 participants. The number of participants in the qualitative arm of the study was 28.5% (63/221).

**Quantitative arm**
A total of 221 questionnaires were distributed and 221 were received (100% return rate). Of these, 52.0% (115/221) were from nyaope users who were from rehabilitation centres and 48.0% (106/221) from nyaope users recruited from the street. A total 86.9% (192/221) of the questionnaires were complete for analysis.

4.4 DEMOGRAPHIC INFORMATION

Results from the FGDs and IDIs indicate that 84.1% (53/63) males and 15.9% (10/63) females participated in the discussions, while 85.5% (189/221) males and 14.5% (32/221) females completed the questionnaires in the quantitative arm of the study. The majority (85.3% [193/221]) of the participants were between the ages of 20 and 30 years, with the mean 25.5 and the mode and median 25. Most (64.7% [143/221]) were single and only 9.5% (21/221) had some form of tertiary education. The majority of participants (89.6% [198/221]) were not employed, with 10.4% (23/221) responsible for their own financial support. The average age for starting to use drugs was 17 years of age (mean 17.7, Mode 17). For more detail on the demographic characteristics of the participants, see Table 4.1.

Although all of the participants were using nyaope, which consists of low grade heroin, 61.8% (136/221) indicated that they had never used heroin before. Other drugs that were used by the participants include: 97.7% (215/220*) used tobacco, 90.5% (199/220*) used cannabis, 90.0% (198/220*) alcohol, 39.5% (87/220*) sniffed something, 38.2% (84/220*) used heroin, 28.2% (62/220*) sniffed benzine, 16.4% (36/220*) abused medication, 10.0% (22/220) used cocaine, 7.3% (16/220*) smoked khat and 6.4% (14/220*) used tik (* one participant did not answer these questions). The majority (84.2% [186/221]) were using nyaope with their friends, 1.8% (4/221) with their family members and 14.0% (31/221) were smoking it alone. When asked about their first experience with nyaope, only 38.9% (86/221) were aware of the fact that they were smoking nyaope, while 61.1% (135/221) were not aware that what they were smoking was actually nyaope.
A total of 65.2% (144/221) of the participants had been arrested and had gone to jail, with 72.9% (105/144) of arrests related to the nyaope user trying to get money in some unlawful way in order to support their habit.

**Table 4.1: Demographic characteristics of sample population**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Rehabilitation</th>
<th>Street</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>98</td>
<td>85.2</td>
<td>91</td>
</tr>
<tr>
<td>Female</td>
<td>17</td>
<td>14.8</td>
<td>15</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-23</td>
<td>39</td>
<td>33.9</td>
<td>34</td>
</tr>
<tr>
<td>24-29</td>
<td>54</td>
<td>47.0</td>
<td>59</td>
</tr>
<tr>
<td>30-35</td>
<td>17</td>
<td>14.8</td>
<td>12</td>
</tr>
<tr>
<td>36-41</td>
<td>5</td>
<td>4.3</td>
<td>1</td>
</tr>
<tr>
<td>Education</td>
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</tr>
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<td>1.7</td>
<td>5</td>
</tr>
<tr>
<td>Primary</td>
<td>5</td>
<td>4.3</td>
<td>4</td>
</tr>
<tr>
<td>High school</td>
<td>95</td>
<td>82.6</td>
<td>89</td>
</tr>
<tr>
<td>Tertiary</td>
<td>13</td>
<td>11.3</td>
<td>8</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>75</td>
<td>65.2</td>
<td>67</td>
</tr>
<tr>
<td>No</td>
<td>40</td>
<td>34.8</td>
<td>39</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12</td>
<td>10.4</td>
<td>11</td>
</tr>
<tr>
<td>No</td>
<td>103</td>
<td>89.6</td>
<td>95</td>
</tr>
<tr>
<td>Financial support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>52</td>
<td>45.2</td>
<td>49</td>
</tr>
<tr>
<td>Friends</td>
<td>3</td>
<td>1.7</td>
<td>5</td>
</tr>
<tr>
<td>Relatives</td>
<td>13</td>
<td>11.3</td>
<td>12</td>
</tr>
<tr>
<td>Parents</td>
<td>48</td>
<td>41.7</td>
<td>40</td>
</tr>
<tr>
<td>Relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>70</td>
<td>60.9</td>
<td>73</td>
</tr>
<tr>
<td>Got a partner</td>
<td>43</td>
<td>37.4</td>
<td>33</td>
</tr>
<tr>
<td>Married</td>
<td>2</td>
<td>1.7</td>
<td>0</td>
</tr>
<tr>
<td>Age of first drug use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-12</td>
<td>7</td>
<td>6.1</td>
<td>5</td>
</tr>
<tr>
<td>13-18</td>
<td>63</td>
<td>54.8</td>
<td>58</td>
</tr>
<tr>
<td>19-24</td>
<td>39</td>
<td>33.9</td>
<td>28</td>
</tr>
<tr>
<td>25-30</td>
<td>4</td>
<td>3.5</td>
<td>8</td>
</tr>
<tr>
<td>31-37</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>Did not answer</td>
<td>2</td>
<td>1.7</td>
<td>6</td>
</tr>
</tbody>
</table>
A total of 71.9% (159/221) participants indicated that they tried to stop using nyaope before but all of them relapsed after some time. The success rates varied from less than a day to 10 years, with the majority (32.1% [51/159]) being able to stop using nyaope for a period between a month and 6 months. The variation in the periods that participants were clean is shown in Table 4.2 as well as the LOC orientation of the participants (LOC will be presented later in section 4.6.3).

Table 4.2: Period that they were able to stop using nyaope

<table>
<thead>
<tr>
<th>TIME STOPPED</th>
<th>NUMBER</th>
<th>Internal LOC</th>
<th>External LOC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Less than 7 days (a week)</td>
<td>32</td>
<td>20.1</td>
<td>20</td>
</tr>
<tr>
<td>8 - 30 days (a month)</td>
<td>28</td>
<td>17.6</td>
<td>21</td>
</tr>
<tr>
<td>31 days to &lt;6 months</td>
<td>51</td>
<td>31.1</td>
<td>36</td>
</tr>
<tr>
<td>6 months to less than a year</td>
<td>18</td>
<td>11.3</td>
<td>13</td>
</tr>
<tr>
<td>1 to 2 years</td>
<td>13</td>
<td>8.2</td>
<td>11</td>
</tr>
<tr>
<td>More than 2 years</td>
<td>3</td>
<td>1.9</td>
<td>3</td>
</tr>
<tr>
<td>Did not indicate how long</td>
<td>14</td>
<td>8.8</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>159</td>
<td>100.0</td>
<td>117</td>
</tr>
</tbody>
</table>

4.5 BACKGROUND TO NYAOPE USE AS DESCRIBED BY THE PARTICIPANTS

The following seven codes or themes, which give some background information related to the access, variability of composition, the monetary cost, how nyaope is consumed, the perceived physical health impact of nyaope on the user, the criminal side of nyaope addiction and the general profile of a typical nyaope user, were identified.

1) The ease of access to nyaope

This theme refers to the ease with which nyaope is accessible and that various people in the communities are able to provide nyaope.

   “Right now nyaope is everywhere; there is not a place where it is not available” [Male, 34]

   “Anyone like a grown man to an old woman who have families, even young guys even grandmothers, friends and the police” [Male, 23] (will be able to supply a user).
The ease of access also means that users even have options regarding the dealers as the quality (as indicated by the ‘high’ that they experience) is not the same across dealers, as shown by the following statement:

“We find out from word of mouth like who sells the best and we go there and buy ……” [Male, 26].

2) Variability in composition
Because nyaope is a cocktail drug, the content varies and sometimes significantly. This theme refers to the variability of the drug as perceived by the users. The variability occurs because often distributors and even sellers add a variety of additional ingredients, both as a way of increasing the potency of the drug and also the quantity. As a result, the exact composition of nyaope varies greatly and is not known, as depicted by the following:

“We will never know” [Male, 21] and “Everyone is coming with their own recipe” [Male, 26].

The only thing that the users seem to agree on is that the base mainly consists of heroin to which other ingredients like vim, ARVs, tile adhesive and rattex (rat poison) are added in order to increase the quantity. The fact that there are so many variables also causes problems for the users as the potency of the concoctions are different, as explained below:

“You can find that there are ten different kinds of nyaope with ten different highs. There is one which has a potent smell of vinegar and the other one smells like Grandpa, which can tell you from the potencies are different from each other” [Male, 31].

Nyaope also comes in a brown or a blue bag but “the brown one is stronger than the blue one” [Male, 33].

The users also seem to have found a way of increasing their chances of getting the best value for the money:

“……………. We compare with the high that last longer. If the one last for two hours and the other high last for six hours we continue from the same dealer who sells the nyaope that last longer” [Male, 26].

3) The monetary cost of nyaope
This theme refers to the monetary cost of nyaope and how users make plans to obtain the money. Although the price of nyaope is relative cheap (when compared to other drugs), with prices ranging
from R20 in Pretoria to R45 in Tembisa, due to the fact that users are smoking many times a day, nyaope is actually expensive, especially for a person who is unemployed. As money is the main determinant for obtaining nyaope, some users have developed means which consist of pooling their money together (“compare”) to buy a fix.

“When you have R30 you can go and buy if you have R15 you can compare with someone and go and buy, that’s how we live and get by” [Male, 27].

“Thirty rand is a lot of money you can buy food with that money and there are some people who work the whole day for thirty rand, it is a lot of money you don't get it easy we hustle hard to get the money” [Male, 20].

The costs also result in the users engaging in criminal activities, showing to what lengths a user will go in order to get money, as explained by these quotations:

“If you do not have finance you have to go begging and stealing even from your own folks. The main thing that makes it difficult to smoke nyaope is financial issues” [Male, 20].

“You can even kill your own parents if you know that there is a safe at home or that your father keeps his gun in the house. It is so easy for you to kill him just that you can get money for nyaope” [Male, 21].

4) How nyaope is consumed
This theme refers to the explanation of how nyaope is consumed by users as they all have their preferences of how to take nyaope. The initial and conventional way of taking nyaope is to smoke it, but some are now injecting nyaope as described:

"I smoke this thing with dagga. I mix it in the dagga. There are those who inject it with a syringe. They first mix it with water, drag it into the syringe then they block their veins and then they inject it” [Male, 25].

5) The perceived physical health impact of nyaope addiction
This theme refers to the perceived health impact of nyaope, from the views of the participants. Although most of the participants admitted that they had used other drugs in the past, they thought that the effects that they were experiencing with nyaope were different. There are claims that a person can get addicted to nyaope after smoking it once and then, when they try to stop, they experience the devastating and debilitating side-effects of nyaope, which forces them to smoke again. Nyaope users
also experience visible side-effects and being a nyaope user contributes to the spread of tuberculosis as explained in the following quotations:

“Nyaope is very addictive, its addictiveness is abnormal” [Male, 22] with a “high that is higher” than any drug that the user has ever smoked [Male, 23].

“It’s exceptionally interesting to me how something so small can be so controlling, it just makes you take every sense that you had have out of you and it just makes you numb” [Female, 31].

“Unfortunately we didn’t know the side effects it causes” [Male, 22].

“This thing affects the brain, self-esteem, manhood, trust, behaviour; this thing is bad it destroys everything. The downs become too much, you crave it too much and that’s how you go in deeper into smoking it” [Male, 23].

“Some of the guy’s hands turn grey and some of them they turn black, their mouths turn black” [Male, 19] and “You end up bleeding with your mouth because nyaope has damaged your stomach inside” [Male, 22].

“Sometimes it causes diseases for some of us. It’s because we share the drug, one person will smoke and pass to another and as this happens every smoker leaves a bit of their saliva and some of us are sick. That is how diseases spread amongst us, we all end up suffering from the same disease. Right now there are about eight to ten of our friends who have died because of the same disease” [Male, 24].

6) The criminal side of nyaope addiction

For a nyaope user, their main concern is to get money in order to buy the next fix. This theme refers to the criminal activities the users resorted to where they would be involved in petty crimes like stealing paraphernalia like cell phones, money from the family, neighbour’s shoes, taps, etc., while females were involved with prostitution. As explained:

“Anything that I would see would give me money I would take it. I would not care what I do or what I get as long as I got money to smoke” [Male, 20].

“The crimes we do are not similar, others they steal clothes, I steal cars and others they do house breaking just to get the amount of money so that they can keep smoking” [Male, 20].

“The girls go where there is money that’s where you will find them. They even rob their clients’ money they run with their clients’ money sometimes. Girls who smoke nyaope cannot help
people get in the taxis and they cannot work to wash cars so the job that they do for money is to sell their bodies” [Male, 29].

7) The typical profile of a nyaope user
This theme profiles nyaope users as people whose main focus in life is to get the next fix. This urge for nyaope changes their life priorities and defines their everyday activities.

“Nyaope becomes a priority, everything else is no longer a necessity, and it shifts your mind so that you make it a priority. It makes an individual to lack in school and if you were part of some sports activity you start lacking in that too. Even hygiene becomes something that is not necessary anymore. It kind of brainwashes you into making it a number one priority in your life because even the types of crime it pushes us to do makes you not care if you live to see the next day” [Male, 27].

“When you are using this stuff the only thing that you need to worry about is where you going get your next fix from. That’s the only thing that is in your mind” [Female, 31].

“After smoking I do not feel the guilt nor do I even think of the consequences of the actions I committed in order to get the nyaope” [Male, 26]. However, the typical user also regrets how the use of nyaope has impacted on his life and destroyed family relationships.

“I am tired of the corrupt life that we live, fighting with my family all the time and every time you are in the community they call you with names. You don’t communicate with people well, your parents and the people who support you always blame you if something goes wrong” [Female, 26].

4.6 DETERMINANTS OF DRUG ABUSE IDENTIFIED IN THE QUESTIONNAIRES, FGDs AND IDIs
The following determinants, as guided by the theoretical framework based on Bronfenbrenner’s Ecological Model (Bronfenbrenner, 1993; van Zyl, 2013), were recognized and identified from the qualitative and quantitative data as having an influence on the use of nyaope in this Gauteng study:

4.6.1 AT THE MICROSYSTEM LEVEL
This is the level representing components such as the effect of nyaope on the individual, personal matters such as the user’s mental health state and behavioural problems influencing their quality of life. The school and academic environment, with the influence of peer pressure as well as the interpersonal
relations between the user, their friends and the people closely related to the individual, will be covered in this section by the following seven themes that were identified:

1) The dopamine-like effect of nyaope on the user
This theme refers to an effect, which has been described as similar to dopamine, resulting from the use of dagga and heroin which are both ingredients of nyaope. This effect mimics the chemical messengers naturally produced by the brain, resulting in the disruption of the communication system of the brain which then leads to the release of abnormally large amounts of natural neurotransmitters (mainly dopamine) which produce the euphoric effects experienced by the users of psychoactive drugs. The dopamine-like effect was described by nyaope users as follows:

“I enjoyed being high then nyaope came along and I started smoking it, so when I tried it I realised that it makes me very high more than any other drug that I have smoked . You see with this other drugs I will remain high for about fifteen minutes but with nyaope it makes you high for about two to four hours, that’s how I got hooked up until this day because I enjoyed being high” [Male, 23].

“I will never forget that first feeling and that’s how I was hooked” [Male, 22].

“If you taste nyaope once you will always continue smoking. Nyaope is very nice” [Female, 24].

“Nyaope makes me very high compared to dagga because whenever I smoked dagga I would feel a zing zing …… sound in my head and after it will make me eat the whole loaf of bread alone but nyaope hmmm (sigh) it makes me a cool calm guy. I feel like I am in own world or I am in planet Mars when I smoked nyaope I feel great” [Male, 26].

However, after the feeling of euphoria has dissipated, some users also feel remorse as the participants described:

“Nyaope cause us a lot stress because when you finish smoking now you stress yourself about how you going to get another joint so you just think about it” [Male, 24].

“Those thoughts of killing yourself do come to mind because this nyaope abuses us because you have to work for it. Whether it is raining or it is cold you have to be on the streets hustling while other children are warm at home” [Male, 33].
2) Mental health of a nyaope user

This theme refers to the perceived effect of nyaope on the mental function of the user. This theme gives evidence of the emotional, psychological and social well-being of a nyaope user and how they think, feel and act during situations that they feel are stressful. For many of the participants, the use of nyaope became a way to relieve stress and a way to help them to function optimally in society as indicated by the following quotations:

“I was under pressure at home, school and my girlfriend’s place so my friends told me that they can give me something that can help relax and clear my mind so that I can think” [Male, 20].

“Every time I had smoked I would feel like everything is simpler, I would feel like I no longer had problems and all sorts of troubles, I would feel like I was just living with no problem” [Male, 26].

“I want to escape the reality of reality. I don’t want to be in reality. I’m afraid of responsibility. I’m terrified of reality as I’ve just said I’m scared of the world I’ve never lived in it before” [Female, 31].

“When I smoke I have energy and confidence. I can talk to people at home and the way we talk I can confront them and tell them anything I want to say” [Female, 26].

“I thought maybe if I smoke nyaope my life will be better. It makes me forget my problems, all the-time” [Female, 26].

“It has this stress free element that it releases out in you that you do not have to worry about the world or any other situation happening around you. It creates this false hope of freedom that is non-existent that it is for the short time. When the high depletes and you come back to reality you realise that I can’t live in a world like this, which is when you go back” [Male, 27].

3) Behaviour problems as identified by nyaope users

The behaviour theme describes the behavioural problems of the nyaope users and can be divided into internalizing and externalizing problems.

Internalizing problems:

Internalizing problems refers to the fact that some nyaope users keep their problems to themselves, directing their feelings and emotions inward, and are therefore not sharing their problems with anybody. Internal problems like depression, social withdrawal and anxiety were described.
“There are thirteen of us in here and I know that each and every one of us has thought about committing suicide” [Male, 33]

“There are times when I just go to my room and cry, wishing that I never knew the taste of this nyaope. I will ask myself why I ever got to know the taste of this thing” [Male, 27].

“Life becomes difficult because when you look around the place you grew in and spent the rest of your life at is no more nice. You even think of killing yourself” [Male, 22].

Externalizing problems:
Externalizing problems means that instead of being able to express their negative emotions or responses to life pressures in a healthy productive way, nyaope users with externalizing behaviours were directing their feelings outward to other people. Externalizing problems such as impatience, aggression, violence and criminal activities were identified.

“Eish! I used to be an understanding person but now I am an impatient person” [Male, 34].

“You just wake up angry at everyone at home just because you need money to buy nyaope. It also happens that you can fight with your parents because of money” [Male, 27].

“You see its either you end up in jail or you end up dead, if you not dead then you end up mentally ill” [Male, 22].

4) School and academic environment of a nyaope user
This theme describes the impact of nyaope on schooling and the academic development of the user. Participants admitted that they were constantly thinking about getting nyaope, and this made it difficult to concentrate at school. Some were expelled from school directly because of their use of nyaope, while others quit school due to their fear of prosecution after committing a criminal act. These views are depicted by the following quotes:

“Nyaope does not go together with school. When you are at school your mind will not be concentrating on what you being taught, all you thinking about is how you are going to get nyaope” [Male, 26].

“I didn’t drop (from) school because I wanted to, but I ended up being expelled at school because I was using the drugs and they said I will end up condemning other young children in lower grades” [Male, 21].
“I was in grade eight; I was at school when I heard that the police are looking for me and my friend, I ran out of school, so when the police came to school to look for me they never found me and that was the last day I went to school” [Male, 24].

But despite the fact that the school environment is also a place where the youth are warned about the dangers of drugs, regrettfully these warnings are not taken seriously, as explained:

“The funny thing is that throughout our schooling career we have always been taught not to do drugs and stay in school but I think there needs to be some form of enforcement that creates an awareness that this thing is real and that once you go out of this path it is going to be quite hard to step back into that line” [Male, 29].

“Leaving school was one of my biggest mistakes” [Female, 31].

5) Peer influence and friendships
This theme refers to the extent to which peers and friends (some from school) influenced the participants’ initial and consequent use of nyaope. The role that their friends and peer pressure was playing in the initiation of nyaope use amongst the participants came out very strongly, as indicated by the following quotations:

“I started smoking nyaope when I was at school with my friends. At school there are groups, there are the cool guys and there are the nerds so we were the cool guys at school. We used to smoke dagga peacefully but there came a time that dagga no longer hit us as hard as it used to. There were people who smoked nyaope at my school but they were few. We started befriendning the nyaope smokers and we started asking them for a taste of what they were smoking” [Male, 23].

“I found new friends who were smoking nyaope and so I started smoking with them and became addicted” [Male, 20].

“My friends told me that dagga is not strong. I should try something different that was when they offered me nyaope, since that day I became addicted to nyaope” [Male, 27].

“I started smoking dagga with friends and as time went on nyaope came into fashion and my friends started to smoke it, for me to smoke it was because of I saw my friends smoking it” [Male, 27]

However, in some cases peer pressure attempted to persuade the users to stop nyaope, but the addiction was stronger than the influence of the peers and friends.
“I don’t have friends, not even one. I feel like a bad person, because they were always begging me ‘please friend leave those things alone, they don’t suit you’. I ended up having no one. They warned me, before they left me” [Female, 26].

Some nyaope users even experienced some form of rejection from their non-smoking friends.

“Friends will not trust you if you smoke nyaope but they don’t smoke it. Most of my friends they don’t smoke it so it is even difficult for them to walk with me. They don’t want to be seen walking with me because people will also think that they smoke. You know what they say birds of a feather flock together so that is why they keep away from us because they will be seen as one of us” [Male, 20].

6) Interpersonal family dynamics

This theme refers to the impact of nyaope on family relationships. Nyaope creates conflicts between the parents, the family and the nyaope addict. Due to the lies that the addict tells and the fact that some addicts even steal from home, they become unreliable and untrustworthy. In order to protect themselves, the families react by hiding things that are valuable under lock and key, with some parents even taking drastic measures like turning their backs on their own children. For the addict, this loss of trust is a regrettable situation which they claim they have no control over:

“I steal from them when I’m there at their house. I steal from them very badly. I lie through my back teeth. Like I lie so badly even I actually believe myself a lot of the time” [Female, 31].

“It also causes conflicts within the family because you start lying and you start stealing from people that are close to you and it creates a lot of trouble not only with the family but also within yourself because you become an untrusted individual. They have to start hiding things from you and locking their bedroom doors and things that are valuable” [Male, 29].

“Right now my mother does not trust me with anything. She can’t even trust me with money anymore because I will take that money and will not be seen for up to five days. When I come back my mother will cry and tell me that what I am doing is not right. I will keep telling her that was the last time I did that. I would end up doing it again because she would give me money but I would spend it on nyaope. It is just so difficult because it is not that I like what I am doing or that I like taking my mother’s money. It is just so difficult to stop smoking this thing” [Male, 27].
"When my family found out that I was smoking nyaope, my father knocked me down with a car. My girlfriend has left; my child is also gone" [Male, 27]

You are not able to stay with the people you use to stay with, people turn their backs on you". [Male, 25]

7) Community factors
This theme refers to the impact of nyaope on the community of the users. Due to the fact that nyaope users steal from their neighbours and the community, the community also reacts by blaming them for anything that disappears, while some users get beaten up and chased away:

“The community says it’s me when things disappear. I have seen and heard that the community does not want me. I saw that I will die in people arms” [Female, 26].

“Being addicted is not nice at all my brother because the community hates you. Because they know that you smoke nyaope, you are always stealing and getting beaten up” [Male, 22].

“I started having a bad relationship with the community even though I was not arrested but the community was not happy with me” [Male, 24].

“People hate us because of we are smoking even our neighbours blames us when things go missing it is if we have bad luck or something because people hate you” [Male, 33].

But participants in this study also blamed the community and environmental factors as contributing to their use of nyaope. They felt that nyaope dealers were not prosecuted and that the high rate of unemployment in the community was a contributing factor to them using nyaope. Being a nyaope dealer themselves also provided them with the means to be able to use nyaope freely:

“In the street I live in there are three drug dealers so I find it difficult to stop” [Female, 26].

“I think the environment we live in makes it easier for us to get it, because people chase us away saying we are addicts but they do not chase away the dealers because the dealers are their mothers, fathers, brothers, sisters and their neighbours. If we come to buy they are happy because they know that they benefit. The money that we buy with buys bread for them ….” [Male, 20].
“So people who sell nyaope they are many it is like if you don’t work the best thing is to sell nyaope and you will be like a working person who has a job. So it makes more income for those who don’t work it is easy for them to sell because they get a lot of income” [Male, 22].

“What made it easier for me to get it was the fact that I was the one selling it. That is what made me get closer to it, I sold in the township” [Male, 20].

4.6.2 AT THE MESOSYSTEM LEVEL
According to Bronfenbrenner’s Ecological Model, the mesosystem relates to the relationships and channels of communication that exist between the different microsystem factors that impact on an individual. The connections that exist between the nyaope user and factors such as home, school, friends, church and neighbourhood can be used as examples. Only one theme related to functional and recreational drug use was identified at the mesosystem level.

1) Functional and recreational drug use
This theme refers to a user’s need to use drugs on a daily basis in order to perform optimally. The evidence of the functional use of nyaope as a means to enable the user to perform ordinary daily tasks and recreational use, where nyaope was used to help them overcome their social inhibitions, was evident with these quotations:

“The first thing when you wake up you need to smoke so that you can face the day, without smoking there is nothing that you can do” [Male, 25].

“Nyaope is like your breakfast, after you have smoked it that is when you can face the day. Once you are addicted there is nothing you can do or achieve without having nyaope” [Male, 25].

“After sleeping with the girl I felt like a boss because I had satisfied her very much so every time I was with this girl I felt that I have to use this nyaope, so that is how I got addicted” [Male, 25].

4.6.3 AT THE EXOSYSTEM LEVEL
The exosystem comprises the more remote social environments which surround the micro systems. Although the individual is not directly involved with the exosystem events that occur, these environments have an effect on the nyaope user. At this level the influence of mass media,
decriminalisation of cannabis, the reality of everyday life and ineffective drug use mitigation policies were identified as themes. Other themes that were identified were the lack of employment and support for drug addiction.

1) Technology and mass media
This theme refers to the influence that the mass media and technology has on drug addiction. Despite global technological advances, where it is claimed that any person with a computer and an internet connection is now able to download the recipes/formulas to manufacture illicit drugs, when asked about the ingredients needed in order to make nyaope one participant indicated that:

“No, we don’t know and we will never know because even on the internet you will never get them (the ingredients)” [Male, 20].

2) Decriminalization of cannabis
This theme refers to views regarding the impact decriminalization of cannabis would have on the sale and use of nyaope. While there are campaigns and debates in South Africa about the decriminalization of a drug such as cannabis, the participants were actually asking and pleading for stricter control on tobacco use. Their arguments were that due to the fact that they were exposed to legal drugs such as cigarettes and alcohol, they are now forced to go for more potent drugs as the effect of the legal substances was wearing off.

“Cigarettes are a gateway drug because from there on you start to realise that cigarettes no longer have an effect on your body and you graduate to something else, you start drinking alcohol and smoking cannabis. I think if the law would start raising the age restriction, for example if the age for the use of cigarettes is increased to 23. I think it will reduce how the youth use drugs and other substances” [Male, 29].

“Actually I think they should close tobacco because it is the one that starts all these things, from tobacco you then move to cannabis, then beer. You get tired of cannabis and beer so you try khat, once you tired of khat that is when you start with this nyaope, next thing you steal from the community. The main reason why I say cigarettes must be stopped is because you are going to want or need to replace one addiction with another that is why you end up using something that not even in your wildest imagination thought you would use. You cannot replace one addiction with another” [Male, 20].
3) Reality of everyday life

Reality of life refers to the subjective expectations and experiences of the users. As indicated, for many a user the smoking of nyaope provides them with some form of escape from their unstructured everyday life:

“If you just sitting and doing nothing it is hard to stop smoking. We get bored here in the township” [Male, 25].

“I had no money to continue college so I would get bored by sitting around the township that was when I started smoking nyaope so that I can be like the other guys” [Male, 32].

4) Ineffective drug abuse mitigation policies

This theme refers to the view that the current drug abuse mitigation policies are ineffective in curbing the use of nyaope in communities. As part of the enforcement policies of South Africa, the police should be conducting drug busts against large scale distributors and drug trafficking syndicates, but the participants claim that while the local police seldom focus on the exchanges that are taking place between sellers and buyers in public places, they are actually the ones getting arrested as per the following quotations:

“This is what the police are doing, they arrest us the smokers but they let go of the dealers which also promote crime of which when they allow the nyaope to get into the country the dealers give whoever is responsible a lot of money for a bribe” [Male, 28].

“Please stop blaming guys like us who are smoking drugs, blame the suppliers. When you come raiding the townships don’t raid us in our shacks, go to Hillbrow were you know they have the materials to cook this stuff” [Male, 20].

Additionally, the participants are of the view that the law enforcement officers are actually part of the problem:

“Even if the cops come to the dealer to arrest him he is going to give the police a brown envelop of bribe at the end of the day you see him back again selling the stuff again” [Male, 20].

“You cannot cut the leaves of the tree and think that the tree will stop growing; you need to cut the roots so that it doesn’t grow anymore” [Male, 28].
5) Lack of employment
Lack of employment is seen as a determinant of nyaope use by some participants. While nyaope users are caught in a circle where unemployment is contributing to drug use and drug abuse is increasing their chances of losing their jobs, the participants expressed the view that if they were able to find employment, they would be able to stop using nyaope.

“When you have a job you will be focusing on the job and you will not have time to focus on drugs. If you have nothing to do you get bored and you just find something to keep you busy like smoking to keep your mind working” [Male, 32].

“I prefer to get a job and work full time, live with my parents again and things to be normal they way they were before. If I can get a job I can stop smoking nyaope completely” [Male, 22].

6) Support for addicts
This theme refers to the participants’ views about the help that would be appropriate for them. Many of the participants were of the view that they would not be able to stop using nyaope on their own, acknowledging that they do need professional support. But although professional support is available in the form of rehabilitation centres, the nyaope users also find it difficult to access this support.

“You can’t stop using nyaope on your own. You need to get serious help” [Female, 26].

“We do need help but the help is slow. We did fill forms and applied for help but they don’t call us” [Male, 28].

“Since 2010 I was trying to stop but I didn’t know where to get help because I did not have money to go rehab” [Male, 25].

4.6.4 AT THE MACRO SYSTEM LEVEL
The macro system represents the larger societal context which is dependent on the influence of the different socioeconomic, ethnic, religious and other sub-cultural groups. At the macro system level, some of the factors that also affect the user’s experiences with drugs include the situation in which drugs are used, the beliefs of the user and the personality characteristics and behaviour of the user. From the qualitative data of this study, the four themes identified as having an influence on nyaope users related to the gateway effect, the spirituality of the user, the LOC of the users and the behaviour of adolescents:
1) The gateway effect
This theme refers to the view that the progression of substance use, which has not been dealt with, is actually fuelling nyaope use, as in some cases dagga was the gateway to nyaope use.

"I started in primary school with Benzine. I got bored with Benzine and then moved on to dagga but it went on to bore me so I decided I should start smoking nyaope" [Male, 20]

“I started smoking dagga but then I felt that dagga is not strong enough for me so that is when decided to try capsule (could not establish what the participant was referring too), we smoked capsule for a long time until it was no longer available in the township. So we went back to smoking dagga until we heard about nyaope in Ivory Park and thought we should just try it out" [Male, 26].

“I was smoking cannabis at the time, only to find out cannabis was a gateway drug. From cannabis you gradually elevate to something stronger, you start creating purposes in your mind of why you use certain types of drugs, for sleep you will probably recommend cannabis, for energy you recommend something else. Cigarettes are a gateway drug because from there on you start to realise that cigarettes no longer have an effect on your body and you graduate to something else” [Male, 29].

2) Spirituality
This theme refers to the spiritual orientation of the user. The positive relationship between the drug abuser’s spiritual orientation and his recovery has been documented in literature. In this study, for 64.3% (142/221) of the participants religion formed part of their everyday life, but 35.7% (79/221) indicated that religion was not important for them and one even indicated that “nyaope is my religion” [Male, 24]. Other views related to religion were captured with some participants blaming their nyaope use on Satan or the devil, while others believe in God.

“The advice that I would give them is that they need to pray, God is the one who can help you with everything……. most of us do not get into this thing because we want to, there is an evil spirit, there is someone who does not want to see others succeeding in life. I think that there is only one thing which can conquer everything and that is prayer and the Lord" [Male, 25].

“We are waiting for Jesus to come and save us basically we are the lost generation” [Male, 20].

“The youth out there needs to be careful. They should stay away from drugs and cigarettes. They should rather stick to going to church and be well behaved children” [Male, 25].
3) Locus of control
LOC, defined as the source of confidence that is held by an individual when dealing with events that occurred internally or externally to them, forms the main thrust of this study.

a) Qualitative responses to LOC
Two themes, namely the internal LOC and external LOC orientation, were identified.

**Internal LOC orientation**
The theme internal LOC refers to a person's belief that they are responsible for their own success and that they are in control of their life. Evidence of the role of internal LOC orientation in nyaope use, where participants are actually taking the responsibility, blaming themselves for their own situation and realizing that they have a role to play in their rehabilitation success or relapse, is presented with the following quotations:

“I can’t run away from my issues I need to face them head on” [Female, 30].

“When you want to stop smoking nyaope you must tell yourself that you are stopping it” [Male, 30].

“If you have made up your mind to stop smoking you can stop smoking. It comes from your heart. Rehab does not help with anything, it just helps with the physical symptoms, the withdrawals and such but everything else comes from your heart” [Male, 25].

“You can’t force a person to stop. They must come forth and say I need help because I don’t want to use nyaope anymore. It doesn’t help to force it on anyone, because when they come back they will smoke again” [Female, 26].

“If you told yourself that you don’t want anything to do with nyaope anymore you can be able to stop smoking nyaope. If you have not told yourself that you are stopping it, there is no way you will stop” [Male, 27].

**External LOC orientation**
The theme external LOC refers to the belief of a person that their decisions and what is happening to them are controlled by factors like the environment, chance or fate, which they can’t control. Evidence that some of the participants tend to have a higher external LOC orientation were found, where reasons given why they were smoking were because of their parents, influence from the Devil and Satan. Some felt that it was very difficult while others were still in denial claiming that they did not have a problem.
The fact that some of the participants were of the opinion that what happened to them was because of external factors beyond their control can be seen by the following quotations:

“The other reason why we continue smoking; it is our families that make us go back” [Male, 23].

“Many people who smoke nyaope are very intelligent, and creative. It is like Satan saw that and he decided to drag us into this nyaope”. [Male, 29]

“You can tell yourself that you are no longer smoking it, and you stay two days at home not smoking it until some Devil comes to your place holding it. At that time you are suffering from the withdrawals, you will end up giving in into temptation and smoking again” [Male, 24].

“It is not that we do not want to stop smoking it is just that it is very difficult to stop. It is in our system, it is in the blood and for it to get out of the system is very hard” [Male, 28].

“When you start smoking you pour just a little bit and you feel how good it is but it just tricks us into using it more. The thought of stopping it has come to mind but to tell the truth I have never tried to stop; even if the thought come I was not taking it seriously” [Male, 20].

“I can say I am worried by what everyone is preaching by saying drugs are deadly and I cannot say nyaope has affected my life because I don’t see anything wrong with my health or any problems. I see myself fine” [Male, 34].

b) Quantitative responses to LOC statements
For the quantitative part of the study, participants were asked to choose between two statements in order to test their LOC orientation after assuring them that there were no right and wrong answers. The responses received to the 13 statements are presented in Table 4.3. Although there was missing data for all the questions, the total response rate to the individual 13 questions ranged from 94.1% to 99.1%.

Scores to LOC statements
The scoring procedure for the 13 statements was designed in such a way that clients with a more internal LOC orientation would produce scores nearer to 13, while those with a more external LOC orientation would produce scores nearer to 26. Some of the statements (2,3,5,6,7,8 and 10) were recoded as the 2nd option (b statement) was an indication of an internal LOC orientation and should thus receive the lower score. The total scores obtained for LOC orientation, which ranged from a possible 13 (high internal LOC orientation) to 26 (high external LOC orientation), are presented in Table 4.4. The total (N=192) is lower as only questionnaires where all 13 questions were answered were considered.
<table>
<thead>
<tr>
<th>STATEMENT</th>
<th>Rehab n (%)</th>
<th>Street n (%)</th>
<th>Total n (%)</th>
<th>Total for study</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Everybody has a choice to take drugs or not, what other people say</td>
<td>59 (51.8)</td>
<td>53 (51.0)</td>
<td>112 (51.4)</td>
<td>218*</td>
</tr>
<tr>
<td>has nothing to do with it</td>
<td></td>
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<tr>
<td>b) Often your friends pressurize you to join them in taking drugs</td>
<td>55 (48.2)</td>
<td>51 (49.0)</td>
<td>106 (48.6)</td>
<td>(98.6)</td>
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<tr>
<td>2 a) It is difficult not to drink at a party where everybody else is</td>
<td>69 (61.1)</td>
<td>52 (50.5)</td>
<td>121 (56.0)</td>
<td>216*</td>
</tr>
<tr>
<td>drinking</td>
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<tr>
<td>b) If a person has decided not to drink at a party they will not drink</td>
<td>44 (38.9)</td>
<td>51 (49.5)</td>
<td>95 (44.0)</td>
<td>(97.7)</td>
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<tr>
<td>3 a) Those who manage to stop using drugs are the lucky one</td>
<td>85 (74.6)</td>
<td>29 (25.4)</td>
<td>114 (53.0)</td>
<td>215*</td>
</tr>
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<td></td>
</tr>
<tr>
<td>b) It is very hard work to stop using drugs</td>
<td>63 (62.4)</td>
<td>38 (37.6)</td>
<td>101 (47.0)</td>
<td>(97.3)</td>
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<tr>
<td>4 a) My friends will not be able to force me to use drugs</td>
<td>73 (63.2)</td>
<td>42 (36.8)</td>
<td>115 (52.5)</td>
<td>219*</td>
</tr>
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<td></td>
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<tr>
<td>b) My friends are influencing me to take drugs</td>
<td>62 (59.6)</td>
<td>42 (40.4)</td>
<td>104 (47.5)</td>
<td>(99.1)</td>
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<tr>
<td>5 a) People take drugs because they feel anxious and helpless</td>
<td>73 (64.6)</td>
<td>40 (35.4)</td>
<td>113 (51.8)</td>
<td>218*</td>
</tr>
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<td></td>
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<tr>
<td>b) When people say that they take drugs because they feel anxious and</td>
<td>57 (54.3)</td>
<td>48 (45.7)</td>
<td>105 (48.2)</td>
<td>(98.6)</td>
</tr>
<tr>
<td>helpless it is just an excuse</td>
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<tr>
<td>6 a) Anybody can become addicted to drugs when they get off the</td>
<td>61 (53.5)</td>
<td>53 (46.5)</td>
<td>114 (52.5)</td>
<td>217*</td>
</tr>
<tr>
<td>straight and narrow.</td>
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<tr>
<td>b) Drug use is an excuse for not doing the things that you are</td>
<td>40 (38.8)</td>
<td>63 (61.2)</td>
<td>103 (47.5)</td>
<td>(98.2)</td>
</tr>
<tr>
<td>supposed to do</td>
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<tr>
<td>7 a) Addiction is for life: once you start, it will never go away, no</td>
<td>104 (92.0)</td>
<td>9 (8.0)</td>
<td>113 (52.1)</td>
<td>217*</td>
</tr>
<tr>
<td>matter what you do.</td>
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<tr>
<td>b) One can stop using drugs but it is hard work.</td>
<td>72 (69.2)</td>
<td>32 (30.8)</td>
<td>104 (47.9)</td>
<td>(98.2)</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>Yes (%)</td>
<td>No (%)</td>
<td>Tally</td>
</tr>
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<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>8</td>
<td>a) A person feel so helpless in some situations that they need to get high</td>
<td>91 (82.7)</td>
<td>19 (17.3)</td>
<td>110 (51.9)</td>
</tr>
<tr>
<td></td>
<td>b) A person can stop using drugs once they have decided not to use drugs</td>
<td>57 (55.9)</td>
<td>45 (44.1)</td>
<td>102 (48.1)</td>
</tr>
<tr>
<td>9</td>
<td>a) It is hard work to stop using drugs, luck has little or nothing to do with it</td>
<td>53 (46.5)</td>
<td>61 (53.5)</td>
<td>114 (54.0)</td>
</tr>
<tr>
<td></td>
<td>b) Staying clean depends mainly on things going right for you</td>
<td>57 (58.8)</td>
<td>40 (41.2)</td>
<td>97 (46.0)</td>
</tr>
<tr>
<td>10</td>
<td>a) I feel powerless to prevent myself from using drugs when I am anxious or unhappy.</td>
<td>93 (81.6)</td>
<td>21 (18.4)</td>
<td>114 (53.5)</td>
</tr>
<tr>
<td></td>
<td>b) If a person really wanted to, he/she could stop using drugs</td>
<td>63 (63.6)</td>
<td>36 (36.4)</td>
<td>99 (46.5)</td>
</tr>
<tr>
<td>11</td>
<td>a) I can overcome my urge to use drugs.</td>
<td>73 (65.2)</td>
<td>39 (34.8)</td>
<td>112 (53.8)</td>
</tr>
<tr>
<td></td>
<td>b) Once I start to use drugs I can’t stop</td>
<td>57 (59.4)</td>
<td>39 (40.6)</td>
<td>96 (46.2)</td>
</tr>
<tr>
<td>12</td>
<td>a) Drugs aren’t necessary in order to solve my problems</td>
<td>79 (71.2)</td>
<td>32 (28.8)</td>
<td>111 (53.1)</td>
</tr>
<tr>
<td></td>
<td>b) I just cannot handle my problems unless I get high first</td>
<td>59 (60.2)</td>
<td>39 (39.8)</td>
<td>98 (46.9)</td>
</tr>
<tr>
<td>13</td>
<td>a) I have control over my drug use</td>
<td>61 (54.5)</td>
<td>51 (45.5)</td>
<td>112 (53.6)</td>
</tr>
<tr>
<td></td>
<td>b) I feel completely helpless when it comes to resisting drugs.</td>
<td>41 (42.3)</td>
<td>56 (57.7)</td>
<td>97 (45.4)</td>
</tr>
</tbody>
</table>

*Incomplete data*
Table 4.4: Total LOC scores (N=192)

<table>
<thead>
<tr>
<th>LOC Orientation</th>
<th>LOC Score</th>
<th>Rehab n=109 (%)</th>
<th>Street N=83 (%)</th>
<th>Total N=192 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>13</td>
<td>1 (0.9)</td>
<td>2 (2.4)</td>
<td>3 (1.6)</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>3 (2.8)</td>
<td>1 (1.2)</td>
<td>4 (2.1)</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>16 (14.7)</td>
<td>8 (9.6)</td>
<td>24 (12.5)</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>19 (17.4)</td>
<td>5 (6.0)</td>
<td>24 (12.5)</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>19 (17.4)</td>
<td>16 (19.3)</td>
<td>35 (18.2)</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>19 (17.4)</td>
<td>17 (20.5)</td>
<td>36 (19.8)</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>11 (10.1)</td>
<td>8 (9.6)</td>
<td>19 (9.9)</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>88 (80.7)</td>
<td>57 (68.7)</td>
<td>145 (75.5)</td>
</tr>
<tr>
<td>External</td>
<td>20</td>
<td>11 (10.1)</td>
<td>13 (15.7)</td>
<td>24 (12.5)</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>6 (5.5)</td>
<td>5 (6.0)</td>
<td>11 (5.7)</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>3 (2.8)</td>
<td>5 (6.0)</td>
<td>8 (4.2)</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>1 (0.9)</td>
<td>1 (1.2)</td>
<td>2 (1.0)</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>0 (0.0)</td>
<td>2 (2.4)</td>
<td>2 (1.0)</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>21 (19.3)</td>
<td>26 (31.3)</td>
<td>47 (24.5)</td>
</tr>
</tbody>
</table>

Relationship between LOC and independent variables

The association between the dependent variable, LOC, and the five independent categorical variables, namely: gender, employment status, religion, institution and education (primary and lower, and high school and higher) were measured by determining the Chi-squared test. The null hypothesis was that the distributions of the variables were independent of each other. The results are presented in Table 4.5.
Table 4.5: Relationship between LOC and independent categorical variables (N=219*)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Internal LOC</th>
<th>External LOC</th>
<th>O.R.</th>
<th>Confidence interval</th>
<th>p-Value</th>
<th>Chi-Square</th>
</tr>
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<tbody>
<tr>
<td>Gender</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>137 (73.3)</td>
<td>50 (26.7)</td>
<td>0.937</td>
<td>0.4043</td>
<td>2.1516</td>
<td>0.8702</td>
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<tr>
<td>Female</td>
<td>23 (71.9%)</td>
<td>9 (28.1)</td>
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<td></td>
<td></td>
<td>0.0267</td>
</tr>
<tr>
<td>Institution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehab</td>
<td>93 (81.6)</td>
<td>21 (18.4)</td>
<td>2.5117</td>
<td>1.3531</td>
<td>4.6626</td>
<td><strong>0.0031</strong></td>
</tr>
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<td>Street</td>
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<td>38 (36.2)</td>
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<td></td>
<td></td>
<td>8.7683</td>
</tr>
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<td>Employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>10 (43.5)</td>
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<td>0.9519</td>
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<td></td>
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<td>Religion</td>
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<td></td>
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<tr>
<td>Yes</td>
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<td>28 (36.4)</td>
<td>0.4887</td>
<td>0.2651</td>
<td>0.9010</td>
<td><strong>0.02638</strong></td>
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<tr>
<td>No</td>
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<td>31 (21.8)</td>
<td></td>
<td></td>
<td></td>
<td>5.3572</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Primary and lower</td>
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<td>14 (100.0)</td>
<td>0.000</td>
<td>0.0000</td>
<td>0.0709</td>
<td><strong>0.0000</strong></td>
</tr>
<tr>
<td>High school and higher</td>
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<td>45 (22.0)</td>
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<td></td>
<td>40.5589</td>
</tr>
</tbody>
</table>

* Two participants did not complete the questionnaires

For Institution (which was Rehabilitation centre or street), Religion and Education, the null hypothesis was rejected and the alternative hypothesis accepted, meaning that there was an association between the LOC orientation of the participant and the three independent variables. Those who have opted to go for rehabilitation are taking control of their lives and are expected to have a higher internal LOC, while those who are in denial that they have a problem are expected to have a higher external LOC. In general, the awareness of God and an internal LOC are associated with better looking after yourself.
(physically and mentally), which would also indicate that the person would not be using drugs. In the context of education, it is expected that a person with an internal LOC would have the attributes to make a success of their studies due to the fact that whether they succeed or fail is very much dependent on their efforts. While it is also expected that the less educated are more likely to have an external LOC due to their belief that fate and luck are having an influence on their successes and failures. Having an internal LOC is thus related to higher academic achievement while an external LOC might lead to lack of motivation for study and school in general. It is also possible that a higher education can influence the adoption of an internal LOC orientation while lower education may lead to an external LOC orientation when assuming that LOC is not a fixed stated and that it can be modified by the environment.

4) The reckless behaviour of adolescents
This theme refers to the view that nyaope use was just one of the 'normal' risk behaviours that many adolescents engage in. Adolescence is a period of curiosity, experimenting and seeking personal identity, and during this period the youth are more susceptible to drug abuse as some teenagers seek thrills and adrenaline rushes by achieving that "high" feeling from substance use. The reckless behaviour of the participants, where they were not thinking about the consequences of experimenting with nyaope, was evident as recorded by the following quotations:

“My first experience with nyaope was because we use to like to experiment with things and to know how things work. I wanted to taste it and I started enjoying it and that's how I got hooked to it” [Male, 32].

“I would say that I was curious and from my curiosity I found the source of euphoria in the high of nyaope that they introduced, only to find that the consequences are horrific. It ends up manipulating you to do things that you would not do in normal circumstances”[Male, 29].

“Forever wanting to try something it’s what got me into this trouble” [Female, 30].

4.6.5 AT THE CHRONOSYSTEM
The chronosystem does not resemble any system that surrounds the individual but incorporates the change that a nyaope user would experience over time. Two themes were identified, namely the influence that the geographical location of South Africa has on drug trafficking and the change that the society is experiencing after the fall of apartheid.
1) Geography and border controls

This theme refers to the view that the geographical location, i.e. where a person lives, has an impact on the distribution, selling and use of nyaope. Some specific nationals are viewed as the main distributors and sellers of nyaope, and the participants are of the view that the porous borders determine the ease of movement of nyaope and other drugs into the country.

“There are so many ways of transporting things here in South Africa. Each and every border gate and port of entry needs to be thoroughly searched. Each and every mode of transportation whether it’s a helicopter or a ship, regardless of what it is transporting needs to be searched by the soldiers and the police. We know that people can even hide these things (drugs) in food” [Male, 25].

3) Society in transition

This theme refers to the changes that the South African population are experiencing after the fall of apartheid. The complicated relationship between the aspirations of the youth and the reality of unemployment, shattered dreams and parents trying to compensate for them not being there for their children were described with the following quotations:

“I need to get something that will keep me busy and focused such as getting a job. When you have a job you will be focusing on the job and you will not have time to focus on drugs. If you have nothing to do you get bored and you just find something to keep you busy like smoking to keep your mind working” [Male, 32].

“Today you find them (other youngsters) struggling the same way as us here at the station. The ones we referred to as stupid back at school they are the ones who are successful and driving cars today and we thought we were the clever one. Look where we ended” [Male, 27].

“There is thing of mothers trying to show the love that they have for their children by giving them lots of money. That parent doesn’t even know what the child does with that money. Sometimes the child ends up doing drugs without the parent even being aware of it. You think it’s loving and caring for your child but you can’t see what he is doing” [Male, 30].
4.7 NEED FOR HELP

The participants expressed many wishes of what they see as possible solutions to their addiction problem that would help them to stop using nyaope. Their responses could be grouped under five main themes, which cover the need for medication; the wish to be busy with some form of activity; the need to finish their own education as well as to be educated about the dangers of drugs. They acknowledge that they need professional help in the form of rehabilitation, but they also ask for support from their family and friends. Furthermore, it is also important that the Government must be committed in the fight against drugs.

1) Medication for the side-effects

This theme refers to the medication that they need to overcome the side-effects of nyaope. Users complained about the debilitating side-effects that they experienced, and hoped that if they could get access to medication, they would be able to stop using nyaope.

“It would be helpful if we can get something that can stop the pains. The pains are very bad” [Male, 34].

“Without medication it is going to be hard” [Male, 24].

“If we can get something to stop cramps and something to help with appetite, the vomiting and the tiredness” [Male, 23].

2) Relief from boredom

This theme refers to the opinion of the users that they smoke nyaope because they are bored. Participants were of the opinion that if they were occupied with some form of activity, preferably a job, they would be able to stop smoking nyaope.

“What I need to do is to keep busy. In the morning I go to work, in the evening I come back home late and sleep. I just need to keep busy. If you doing nothing you end up relapsing” [Male, 28].

“I think the thing that can help me is getting a job and keeping busy” [Male, 20].

3) Receiving some form of education

This refers to the view that formal education, as well as education about the dangers of drugs, would assist them in not using nyaope. Participants expressed the wish that they would like to finish their education and also asked for drives to make the youth aware of the dangers of drug abuse. As part of
the campaigns to make the youth aware of drug abuse, they should be empowered to help them to be able to handle peer pressure as many blamed their friends for them ending up smoking.

“If they can take us to college so that we can start were we dropped and finish our studies we can be normal again in life and we can earn the trust of others as well” [Male, 21].

“The only thing that can be done to stop this thing is to teach and educate us as people to not actually use it” [Female, 31].

“After coming back from the rehab I had stop smoking, I even attended college in Kempton Park I went back to smoke again because of seeing my friend who smokes it” [Male, 25].

4) Need for rehabilitation and support

This theme refers to the need for rehabilitation and support for the users. The need for rehabilitation and support during the process was expressed by many users, who acknowledged that they didn’t think that they would be able to stop using nyaope on their own and that they needed professional help.

“I also need some professionals someone I can talk to, tell them my problems and tell them when I started smoking nyaope so that they can build up on that and also analyse me and everything” [Male, 20].

“The help must not be for one person only because when the person comes back clean and find the rest of us smoking he will relapse. The help must be for all of us. You see if we get help for all of us we can encourage each other not to smoke again”. [Male, 28]

“The support at home is very important. I think you need to tell yourself, but mainly I think you need the support of your parents because you not going to stop on your own” [Male, 20].

“My mother phones me every single night. My mother always says to me my girl we all waiting for you, we are all so proud of you we just need you to know that everybody is behind you, my girl I love you more that you’ll ever know and I’m so proud of you. Those words mean more to me that anything in the whole world. My girl I’m proud of you, because I don’t hear them often” [Female, 31 in rehabilitation].

5) The role of Government in the fight against drugs

This theme refers to the view that government is the key role-player in the fight against nyaope and other drugs. The participants wished that the Government would protect the borders against drug
traffickers, that the dealers be arrested and that corruption and bribery must be stopped. The ease of access to nyaope makes it difficult for them to stop.

“To destroy nyaope, the government needs to destroy the ones who allow it into the country; they must stop it from entering the borders” [Male, 28].

“If they can eliminate the accessibility of this thing it will be hard to get it, it can also eradicate the portion of the crime that is going high every day. I think the biggest thing is to eliminate it where it comes from like the source” [Male, 29].

“Even if the cops come to the dealer to arrest him he is going to give the police a brown envelop of bribe at the end of the day you see him back again selling the stuff again, so the environment we live in plays a very serious role for us to get the stuff. If the environment was not taking a part in this whole thing it was going to be hard to get the stuff” [Male, 20].

“The only way we can stop is when nyaope stops being available” [Male, 24].

4.8 A SUMMARY OF WHAT IS NEEDED TO STOP THE USE OF NYAOPE AS EXPRESSED BY THE PARTICIPANTS

Some of the participants showed great insight into their problem, providing solutions such as going for rehabilitation, occupying a full-time job, acknowledging that they do need spiritual help and support and that their friends have to be selected with care, as per the following quotations:

“I think we should get treatment and there after get jobs so that we can keep busy” [Male, 21].

“What I think will be best is if we can treatment that will drain this drug out of our systems and make us not to crave nyaope anymore. After that we can get jobs or businesses that will keep us busy and forget about nyaope. Focus on the future because are our peers have gone far with life” [Male, 27].

“What I need is to get a job and to be at church every Sunday, like Monday to Saturday I will be at work and Sunday I will be going to church, Monday work again, and friends no friends because I know they are not good” [Male, 22].
4.9 PARTICIPANTS ADVICE TO THOSE WHO HAVE NOT YET STARTED USING NYAOPE

Based on their experience, which includes regret and remorse, many were of the view that they are able to offer advice to other youngsters who haven’t started experimenting with nyaope, urging them to take control of their lives and focus on their futures.

“My advice is that they should not even try, not even a little bit because once you try it you are hooked. Once you put it on your lips, there is no turning back”. [Male, 27]

“I would tell them not to smoke because smoking nyaope is like provoking a dog that is far from you to come and bite you because at the end it is you who will regret why you started smoking nyaope” [Male, 22]

“A person who smoke nyaope doesn’t have a future, they must not fall on this thing because they see that people who are involved in drugs they don’t have future” [Male, 21]

“Do not even experiment; do not even start with cigarettes because that is where the problem starts by experimenting with alcohol and cigarettes. Just focus on sports, acting, theatre, drama or whatever. Just stay away from substance abuse because there are people like us who are telling you that your future is in your hands. If you decide that you are going to experiment with your future you will end up in jail or six feet under. Otherwise the country does not have any future so please do not experiment” [Male, 20].

4.10 CONCLUSION

In this chapter, the data that was collected via the questionnaires as well as the FGDs and IDIs is analyzed and categorized according to Bronfenbrenner’s Ecological Model (Bronfenbrenner, 1993). From the data it is clear that there are many factors influencing and affecting the youth of South Africa to use nyaope. Results indicate that 75.5% of participants could be classified as having an internal LOC orientation and that there is an association between the LOC orientation of the participant and the three independent variables, namely rehabilitation centre or street, religion and education. In the next chapter, nyaope addiction and the role of the LOC orientation of the user specifically will be discussed in more detail.
CHAPTER 5: DISCUSSION, RECOMMENDATIONS AND CONCLUSIONS

5.1 INTRODUCTION
In South Africa, substance abuse is one of the most significant health and social problems (Flisher et al, 2003) as the cost of drug abuse, which includes the effects on family dynamics, community disorder, prisons filled to capacity, increased medical costs and the spread of diseases such as STIs, has to be taken into consideration as well (Hodza, 2014). Over and above these factors, nyaope also brings additional challenges to already inadequate mental health services because of poor understanding of nyaope as a drug, the large numbers of addicts and not enough access to rehabilitation services (Mokwena, 2015a).

As no single factor is able to predict whether a person will become addicted to drugs or not, a combination of factors related to the five sub-systems as recognised by Bronfenbrenner’s Ecological Model (Bronfenbrenner, 1993) were identified and categorized. As the aim of this study was to explore and describe the role and extent to which the drug user’s LOC influences the use of nyaope in Gauteng, this discussion will only concentrate on LOC, which is a recognized predictive factor in the onset of substance use (Farhadinasab et al, 2008).

5.2 STUDY DESIGN
The study design was a mixed method where structured questionnaires and semi-structured interviews were used. Despite differences in methods of data collection, analysis and interpretation, this combination is often used in order to generate confirmatory results (Harris and Brown, 2010). With the flexible, semi-structured interview guide approach (which is neither too rigid nor too open), a great amount of data was elicited from the interviewees and it was used to support the quantitative data related to the LOC orientation of a nyaope user.

The triangulation that was achieved by combining the two methodologies, namely qualitative and quantitative both describing the LOC orientation of a nyaope user, was used to cross-validate the results. This “between or across” method of triangulation represents the most popular use of triangulation and is largely used to test the degree of external validity (Jick, 1979). Furthermore, the effectiveness of triangulation rests on the premise that the weaknesses in either method are
compensated for by the counter-balancing strengths of the other, which allowed the researcher to be more confident with the results (Jick, 1979).

5.3 RESPONSE RATE
The estimated sample size, based on statistics received from the SANCA Thusong Centre in Mamelodi (Mayathula-Khoza, 2013) and calculated at a 5% margin of error, a 95% confidence level with a 50% response distribution, was a total of 201 participants (Raosoft, 2004). The final sample size was actually 221, with a total of 192 questionnaires with complete data on the quantitative aspect of LOC resulting in a response rate of 86.9% (192/201). According to Fincham (2008), response rates of at least 60% should be the goal of all researchers with an expected response rate of 80% for the respondents to really represent and reflect the elements of the study population. As the non-response bias in this study was only 13.1%, the researcher felt confident that the response rate for this study was sufficient to enable generalizing the results to the target population, which were nyaope users in Gauteng.

5.4 DEMOGRAPHIC INFORMATION OF PARTICIPANTS

Gender
In this study, the majority of participants were male, with 84.1% (53/63) males and 15.9% (10/63) females participating in the FGDs and IDs discussions, while 85.5% (189/221) males and 14.5% (32/221) females completed the questionnaires in the quantitative arm of the study. These figures for the males are a bit higher than the figures published by the National Institute or Crime Prevention and the Reintegration of Offenders (NICRO) in 2014, where 75.26% of their offenders that were using substances were males and 24.66% were female (Regan, 2014). This discrepancy in figures could be due to selection bias as it was easier to find a male nyaope user on the street than a female user. Typical male nyaope users assemble in public places like taxi ranks, shopping centres and parks, and these are places female users don’t frequent. In such groups, males find it easier to hustle for money by doing a number of activities like washing taxis, assisting shoppers with carrying their bags to the taxis etc, and females do not necessarily fit into these activities.

Across the board, more males than females (3:1 ratio) access drug abuse treatment facilities. The general belief is that for males the funding and opportunity to utilise or abuse substances is better, that parents tend to be stricter with female than with male children, and that it is more socially acceptable for male youths to smoke and consume alcohol (Ramlakan, 2010). This is confirmed by Myers et al (2012)
who reported that only 25% of admissions for treatment throughout South Africa were women. In this study, only 14.8% (17/115) of the participants from rehabilitation centres were females. Although the commonly held view is that substance and drug abuse is predominantly a male issue, the results of this study are in agreement with the report of the Department of Community Safety Policy and Research, which also reported that a minority of the respondents who were using nyaope were females (GPCS, 2013).

But SANCA (2013) observes that because of the barriers that vulnerable females experience in accessing treatment facilities, the statistics are not accurate and that females don’t use less drugs than their male counterparts, but that the only differences between the two genders are in the type of substances used. The type of drug therefore becomes the variation, rather than access to rehabilitation. This highlights the importance and need for the development of specialised, gender-specific treatment services that will also address some of the barriers that prevent females from seeking treatment, such as issues of child care while in rehabilitation, limited finances and unemployment, the social, cultural and personal beliefs and behaviours of the user, stigmatisation and the problems of pregnant women who abuse substances (SANCA, 2013).

**Age**

The ages of the participants in this study ranged from 18 years to 40 years, with the majority (85.3% [193/220]) of the participants between the ages of 20 and 30 years (Mean 25.5; Mode and Median 25). This study population could be regarded as a group of young adults. These figures are in agreement with the figures published by NICRO (Regan, 2015) where the majority (18.9%) of their total population (children and users up to 60 years of age included) was between the ages of 19 to 29 years. This identifies the typical nyaope user as a young adult. However, the cut-off age of 18 years does not present the full picture as anecdotal evidence suggests nyaope users include younger children, but due to the ethics of conducting this study, users who could not provide informed consent were not included. There is, however, the need to explore nyaope use in children younger than 18 years.

**Age of first drug use**

Global data suggests that substance use often starts between the ages of 14 and 15 years (Visser and Routledge, 2007). The predominant explanation seems to involve the fact that adolescence is a period of transition—in which individuals seem to be more impulsive, reckless—and non-conforming than during other developmental stages of their lives (Visser and Routledge, 2007). Although taking drugs at any age can lead to addiction, the problem is that the earlier that drug use begins, the more likely it will
progress and escalate into more serious abuse (Drugabuse, 2015; NIDA, 2010). This suggests that current nyaope users who were included in this study were likely to have initiated nyaope or other drugs at an earlier age. It also suggests that children who use nyaope are likely to continue with nyaope into their adult lives.

In this study, the average age for starting to use drugs was 17 years old (mean 17.7, Mode 17), one participant indicated that he had started using drugs at the age of seven, and 9% (20/221) of the participants were younger than 14 years of age when they started experimenting with drugs. These results are in agreement with Moodley et al (2012) who also reported that the first use of nyaope most commonly occurred at 17 years of age.

Given that the brain of a person below the age of 25 years is in the process of actively and rapidly developing the areas in the brain that govern decision-making, judgment and self-control (Medicine net, 2014), adolescents that use drugs may be especially prone to risk-taking behaviours, including risky sexual behaviour (Binford 2012; Drugabuse, 2015). Early use or experimenting with drugs is a strong indicator of problems such as absenteeism from school and academic failure, which can impact on the rest of the user’s life. Additional problems with substance abuse at a young age include addiction (NIDA, 2010) and psychological disorders (Visser and Routledge, 2007). It is therefore very important to try to prevent the early use of drugs as it may reduce the risk of progressing to later abuse and addiction (NIDA, 2010), with a special focus on nyaope. The biggest cause for concern is the fact that these young adults represent South Africa’s future workforce (Harker et al, 2008).

Unemployment
The results from this study have also shown that 5.9% (13/221) of the respondents only started using drugs at the age of 25 years and above. This is an interesting phenomenon which might be explained by the despair of South African youth with 89.6% (198/221) of the participants, 51.1% (113/221) 25 years of age and above, had no job and where nyaope could have been used to provide them with some form of an escape from their everyday life. This finding of people starting to use drugs at a later stage of life is also in contrast with the “maturing out” hypothesis published by Winick in 1962, which states that opioid dependence is a self-limiting process and that most opiate dependents mature out of their use naturally (Dos Santos, 2011). The speculation why opiate dependents “mature out” in their mid-thirties is that adolescents take drugs in order to be able to cope with the challenges and problems that they face during early adulthood. As they mature they are better able to cope with the situation or, with a change in their environment, they no longer need the support that was given by the opiates (Dos
Santos, 2011). This seems to contradict the South African situation, where drug use amongst the youth is on the increase and an estimated 15% of South Africans abuse drugs (Thompson, 2013).

The high rate of unemployment is supported by the World Economic Forum’s (WEF) Global Risk 2014 report (WEF, 2014), which states that South Africa has the third highest unemployment rate in the world for people between the ages of 15 to 24, with an estimated 50% of this age group being unemployed. This is the start of a vicious circle where unemployment contributes to drug use while drug abuse increases the chances of the user losing his/her job, decreasing their chances of gaining employment ever again, which in turn contributes to further drug use and aggravates the circle of poverty (Mokwena and Morojele, 2014).

Figures from this Gauteng study were interesting as 89.6% (198/221) of participants had no formal means of income, with only 10.4% (23/221) indicating that they were "employed". After discussion with the participants, it was clear that what was regarded as “employment” was actually just a way of getting money in order to buy the next supply of drugs, with some of the participants even selling nyaope themselves. The financial support that they received was mainly from friends, relatives and parents, who all try to provide them with the basic necessities.

**Criminal background**

Tshabalala (2014) did a study on the rate of crime in the KwaZulu-Natal Province and findings clearly indicate that unemployment contributes to the crime rate in South Africa. But when living in a community that is plagued by nyaope, the situation is worse as it is a well-known fact that a nyaope user will steal just about anything in order to support their habit. A total of 65.2% (144/221) of the participants in this study had been arrested and gone to jail, with 72.9% (105/144) of arrests related to the nyaope user trying to get money in some unlawful way in order to be able to buy drugs, as a significant number of respondents openly admitted that they were engaged in committing crimes. While drug abuse in general does have a criminal element, nyaope in particular has an increased element of criminality because of the increase in petty crime like stealing, as it is a direct way of providing money for more nyaope. According to SAPS figures, 60% of crimes nationally were related to substance abuse (SAPS, 2014) and the 2014 crime statistics indicate that drug-related crimes increased by 26.6% during 2013/2014 after a 13.5% increase during 2012/2013 (Crime Stats SA, 2015).

**Relationship status**

Most (64.7% [143/221]) of the participants were single, 34.3% (76/221) were in a relationship with a girlfriend or boyfriend and only 0.9% (2/221) were married. Interviews with participants confirmed that a typical nyaope user has no time or interest for a meaningful relationship with the opposite sex. The
male users also suggested that nyaope use results in loss of sexual function and that they struggled to get sexual erection, but this was not the focus of this study.

**Educational Status**

Nyaope has had an impact on the educational status of the participants. Although most of the participants had some form of education, with only 4.1% (9/221) having no formal schooling, only 9.5% (21/221) had a tertiary education which could have increased their likelihood of finding employment.

At school, children face challenging social and academic situations often get exposed to cigarettes, drugs and alcohol for the first time, which in turn can influence them to start using drugs on a permanent basis. The influence of peer pressure is well documented as friends and acquaintances play a big role in behaviour during adolescence, with many of the participants admitting that they were influenced by their friends to start using nyaope. Using nyaope while in school causes a vicious circle where drug use can influence academic performance and poor academic performance in turn can put a child further at risk for drug abuse (NIDA, 2010). Also, as drug and alcohol abuse affects brain function in areas that are critical to motivation, memory, learning, judgment and behaviour control, it is not surprising that adolescent drug users experience problems at school (NIDA, 2010).

A study that was done amongst high school pupils in Gauteng, the Free State and the Eastern Cape revealed that 58% regularly used dagga at school while 38% said other drugs were used on school property (News24, 2013). Both nyaope (which is often smoked with dagga) and dagga itself are easily available in the townships, even to primary school children, which raises a concern of drug abuse interfering with academic performance at an early age. There are reported cases of children as young as nine years selling drugs to primary and high school children on behalf of their parents (News24, 2013). This confirms the role of the home environment where parents engaging in criminal activities can increase the child’s risk of developing drug problems (NIDA, 2010).

**Substances used**

Results obtained quantitatively showed that the participants used a variety of substances and many of them at the same time. The combination of two or more drugs increases the likelihood of drug-drug interactions, which could pose a significantly higher negative outcome than the risk of the individual drugs (NIDA, 2010). In the case of nyaope, the drug-drug interactions become a significant problem due to the uncertainty of the contents of a nyaope joint.

By far the majority (97.7% [215/220]) (* incomplete data) of the participants smoked cigarettes before, which is a gateway to other drugs and alcohol (Biederman et al, 2006). In an attempt to combat
cigarette use in South Africa, tobacco advertising and promotion is banned, and smoking is prohibited in all public places, including the workplace (Tobacco Products Control Amendment Act. Act No. 12 of 1999). Although the passing of this act has been reported as one of the most successful pieces of legislation on tobacco control, cigarette use is still common among young people. However, participants in this study acknowledged the influence of cigarettes on other drugs, including nyaope, and actually recommended stricter control of tobacco use. Their views were that cigarettes are a gateway drug where the user is always looking for something else or stronger, as they no longer experience the initial “high” that they experienced when they started smoking. Some even asked that smoking be banned completely, claiming that you can’t replace one addiction with another.

On the other hand, South Africa has passed the Medical Innovations Bill – Government Gazette, 18 February 2014 No. 37349 Page 6 (5), which “legalise and regulate the use of Cannabinoids for medical purposes and for beneficial commercial and industrial use” (News24, 2015a). Cannabis/ marijuana is to date a genetically pure plant, occurring globally, whose chemicals (cannabinoids) are claimed to offer medicinal, industrial, agricultural, ecological and socio-economic benefits to the man on the street (News24, 2015a). The U.S. Food and Drug Administration (FDA) has not recognized or approved the marijuana plant as a medicine due to the fact that not enough large-scale clinical trials have been conducted to show that the benefits of the marijuana plant (as opposed to its cannabinoid ingredients) outweigh its risks in the patients that it is meant to treat (NIDA, 2015). However, there are two FDA-approved medications that contain cannabinoid chemicals in pill form. They are: delta-9-tetrahydrocannabinol (THC) which may decrease pain, inflammation and muscle control problems, as well as increasing appetite, and reduces nausea; and cannabidiol (CBD) which may be useful in reducing pain and inflammation, controlling epileptic seizures, and possibly even treating mental illness and addictions as it does not affect the mind or behaviour (NIDA, 2015). It is important to remember that the term medical marijuana refers to the treatment of a disease or symptom with the whole, unprocessed marijuana plant or its basic extracts, and it doesn’t mean that smoking the marijuana plant is now legal.

SANCA acknowledges that the debate on the decriminalising of cannabis use for medicinal purposes may have some merit but, due to the overwhelming negative physical and psychological addictive effects of cannabis, their priority remains to inform and educate the general public and substance users about all the negative and harmful effects of cannabis (SANCA, 2014).

An amendment to the Drugs and Drug Trafficking Act, 1992 (Act 140 of 1992) was signed in March 2014, meaning that if found using or in possession of nyaope a person may be prosecuted, facing up to
15 years in prison or a fine as determined by the court. The penalty for dealing could be 25 years in prison, a fine or both (Government Printers, 2014). This legal amendment was crucial as the economic and social problems caused by nyaope, such as crime and prostitution, have a significant impact on communities and the country as a whole. Also, the legislative amendment empowers law enforcement officers so that they are able to decisively deal with the scourge of nyaope and are able to arrest perpetrators within a legal framework.

**Spirituality**

Galanter et al (2007) reported that there was a positive relationship between the drug abuser’s spiritual orientation and his recovery, which is supported by the findings of this study. The findings from this Gauteng study also found that there was a significant relationship between religion and whether the participant was from a rehabilitation centre or the street (p=0.0000). With a total of 64.8% (92/221) of the participants in rehabilitation centres and 35.2% (50/221) on the street, some form of religion was important (Results not shown in Chapter 4).

Belief in God or in a higher power (spiritual issues) as a motivation to deal with problems such as alcoholism, drug addiction and compulsive-drinking is also covered under the “Twelve-step program” or the “Spiritual principles” of sobriety as the guiding principles of Narcotics Anonymous (Recovery, 2014).

**Previous attempts to stop nyaope use**

Results of this study show that the majority of participants (71.9% [159/221]) previously tried to stop using nyaope at some stage, but relapsed. The success rates varied from less than a day to 10 years, with the majority (32.1% [51/159]) being able to stop using nyaope for a period between a month and 6 months. From the results presented in Table 4.2, it can be seen that the majority (73.6% [117/159]) of those who tried to stop were classified as having an internal LOC orientation. The severe withdrawal symptoms, which can present as severe abdominal cramps, diarrhoea or flu-like symptoms, and which can last for four to six days, are the cause why it is difficult for nyaope users to stop as they keep on smoking in order to curb the cravings (Mokwena and Huma, 2014; Maseko, 2015).

Both dagga and heroin, which are the main ingredients of nyaope, are dependency-forming drugs, which explain the addictive effect of nyaope. Although drug addiction is a treatable disease and nyaope addicts can be successfully rehabilitated, due to the chronic nature of addiction the reality is that a relapse is not only a possibility but a likely event (NIDA, 2010). Weich et al (2013) reported that the short-term success rate for total opioid abstinence was low, despite in-patient treatment. In their
National Treatment Outcome Research Study in a 3-month follow up of 242 opioid-dependent patients, 34% of the patients relapsed to heroin use within 3 days, 45% within 7 days, 50% within 14 days, and 60% within 90 days (Weich et al, 2013).

Nyaope users often have to go for several rehabilitation treatments to learn to cope without the drug, a process that varies from one person to the next (Maseko, 2015). Although most of the participants were attempting to stop nyaope on their own without success, this process is valuable as it is important for a user to realise that rehabilitation is a complicated, multifactorial process and that they need professional help in order to succeed if they want to change behaviour. It has been shown that the best way to ensure rehabilitation success is by tailor-making addiction treatment in order to address each patient's drug abuse patterns and drug-related medical, psychiatric-and social problems. This can be achieved by modifying the user’s attitudes and behaviours related to drug abuse, and by increasing their life skills so that they will be able to handle stressful circumstances and environmental cues that may trigger their cravings for drugs (NIDA, 2010).

The incidence and prevalence of substance use among young people is increasing. Green (2007) stated that from 1992 - 1995 the use of drugs among teenagers increased by 600% and that this figure was on the rise, standing at 1100% in 2007. It is also reported that 1 in 2 children in the average SA home are addicted to drugs or alcohol, or run the risk of becoming addicted (Pienaar, 2011). This is a concerning trend and raises the need for comprehensive intervention programmes for those already addicted. But most drug rehabilitation centres have a success rate of less than 3% (Green, 2007), and drop-out rates of 40% specifically for nyaope have been reported. The determinants of rehabilitation outcomes are the type of facility (in- or out-patient), facility location (e.g. big city or small town) and the substance abused (Ramlagan et al, 2010). Ramlakan et al (2010) ascribe the 40% drop-out rate for nyaope to the treatment received by the users. In-patients are often given Subutex (buprenorphine hydrochloride) and Suboxone (buprenorphine hydrochloride and naloxone hydrochloride), which are approved for the treatment of opiate dependence by preventing symptoms of withdrawal in heroin and other opiates (Parry et al, 2007). Due to the fact that an out-patient facility has little control over their patients, abusers have a higher chance of being influenced by the community, including their friends who use drugs, before they complete the treatment therefore their success rates are lower and they don't have the supportive drugs to assist in dealing with the withdrawal symptoms.
5.5 THE ROLE OF LOC
There is a strong relationship between external LOC orientation and addictive behaviour (Bennet et al, 1998; Jafari and Shahidi, 2009) where individuals with an external LOC orientation were found to be more likely to be drawn to addiction and to commit more crimes compared to their counterparts with an internal LOC orientation (Booth-Butterfield et al, 2000). The concept suggests that the effects or outcomes of one’s behaviour greatly impact the motivation of the individual to engage in such behaviour (Kang et al, 2015). The result is that if there is any change in the way a person thinks, or if there is a change in the environment, the behaviour of the person is likely to change. This interaction between a person and his or her environment can be measured on Locus of Control Continuum scale that ranges from internal to external. It is important to realise that, depending on the situation, a person can vary on the scale between internal and external. As a fairly stable construct, LOC can be helpful in assessing how individuals perceive their environments and how they may respond to different interactions within those environments (Page and Scalora, 2004). Knowing what the LOC orientation of the drug user is can thus be utilized in predicting the readiness or willingness of the user to go for treatment, as was seen in this study where 73.6% (117/159) of the participants that tried to stop had an internal LOC. Knowledge of the LOC orientation can thus be used practically by clinicians in predicting the treatment outcomes, depending on the type of treatments the user is referred for (Page and Scalora, 2004).

In this study, participants were given 13 statements from which they had to choose the option that best described their situation. The results show that 27.6% (61/221) of the respondents could be classified as having an external LOC orientation while 72.4% (160/221) were classified as having an internal LOC orientation. Based on the results of a previous study (Mokwena and Fernandes, 2015), which reported on the high external LOC of nyaope users, this was not expected when the study was conceptualized. The current results are positive as the high number of participants with an internal LOC orientation is an indication that they were taking responsibility of their life and what was happening to them. This finding was confirmed with results showing a positive (p=0.0031) relationship between the LOC orientation of the nyaope user and the institution (rehabilitation centre or street) (Table 4.5). The benefit of such a situation is that they are able to take the decision to improve their situation, e.g. by taking steps to access rehabilitation services. The fact that only 27.6% (61/221) were classified as having an external LOC orientation is also valuable as an indication that the minority in this study felt that they have little control over what is happening with them.

Page and Scalora (2004) reported that if the LOC orientation of the drug user is found to shift over the course of treatment as claimed by Figurelli et al (1994), the LOC score of a drug user on treatment
could also be used as a viable indicator for treatment progress. Furthermore, Figurelli et al (1994) also reported that participants with an internal LOC orientation tended to be more successful with less structured interventions, while the participants with an external LOC orientation were more successful with highly structured interventions. This is a very important finding that could be utilized in South Africa’s drug rehabilitation programmes. The fact that the majority of the respondents in this study had more internal LOC orientation means that a “less structured” intervention programme could be used to help with their rehabilitation. By applying a less structured programme, human resources could rather be utilized in the structured interventions resulting in a better success rate for rehabilitation programmes as the programme could now be tailor-made based on the user’s LOC orientation.

Weisz (1986), as cited in Page and Scalora (2004), found that the more intensive and interpersonal interventions resulted in the development of a more internal LOC orientation, better treatment outcomes and fewer relapse problems after treatment. This suggests that a person who was able to recognize the link between actions and consequences, a characteristic consistent with an internal LOC orientation, tended to report fewer problems after treatment. Furthermore, the youths who were not able to readily recognize patterns that lead to failure, a common characteristic for external LOC orientation, typically experienced more problems throughout treatment and may have issues associated with resistance to treatment. Hence, characteristics consistent with an internal LOC orientation were found to be predictive of treatment success.

The South African approach should thus be to help those users with a high external LOC orientation by enrolling them in an intensive structured intervention aiming at changing their LOC orientation from external to internal, while those users who have a high internal LOC orientation should then rather be enrolled in the less structured programme. This is supported by Trice (1990), as cited in Page and Scalora (2004), who said that adolescents with an internal LOC seemed to respond better to less structured interventions. If that is the case, human resources could be deployed better by concentrating on changing the high external LOC orientation of the user to a high internal LOC needing a less structured intervention. Therefore, determining the LOC orientation of a nyaope user could guide the rehabilitation centre to an appropriate treatment programme, which eventually could lead to a better success rate in rehabilitation than the rate of less than 3% as reported by Green (2007).

This principle of measuring the LOC orientation over time could also be used to monitor the treatment progress of nyaope drug offenders, where rehabilitation could provide an alternative to a proposed jail sentence of up to 15 years or a fine (Collins and Skelton, 2014) when found in possession of nyaope, and a sentence of 25 years when caught selling the drugs. The problem is that nyaope is also available...
in prison. During 2013 a warder at the Pretoria Central Prison was found in possession of 49 sachets of nyaope and was arrested for his involvement in a drug smuggling syndicate (Skosana, 2014). One of the FGD participants in this Gauteng study also described in detail how he acted as a nyaope dealer for his prison inmates.

There are doubts about whether imprisoning someone for what is essentially a health-related issue is not counterproductive and a huge waste of funds that could rather be spent on rehabilitation (Matuntuta, 2014). Van Niekerk (2011) says that that: “Making people criminals for taking psychoactive substances is in itself criminal, for one is dealing with, at worst, a vice but not a crime.” His contentions are that drug use is a health issue; a prison sentence is not a deterrent since drugs are available in prison; and that fear of prosecution would actually discourage drug users from seeking treatment (van Niekerk, 2011). Also, taking into consideration that it costs taxpayers about R9,900 (van Niekerk, 2011) a month to keep someone in prison, a better proposition would be to look at the root cause of the problem and to use restorative justice and alternative forms of sentencing (Collins and Skelton, 2014).

Some professional people even ask that a drug such as nyaope be legalized (Hugo, 2015) claiming that the “war on drugs has failed” (van Niekerk, 2011; Hugo, 2015). This is based on the rationale that where there is a high demand alongside prohibition, a criminal profit opportunity is inevitably created, resulting in higher prices for the merchandise and an attractive market for new producers and sellers to enter (van Niekerk, 2011). This situation was also recorded in this study where some of the participants of the FGDs and IDIs openly admitted that they were also acting as drug dealers in their communities in order to boost their financial situation. The argument is that by legalizing the drug the industry can be controlled. However, this approach is not supported by public health principles of health promotion, which include the need for legislation to control drug abuse.

The global trend is also to do away with the harsh, costly and ineffective enforcement approach and to move in the direction of a greater emphasis on treatment and harm reduction by approaching the problem as a public health issue and not a criminal offence (van Kerken, 2013). But in South Africa with the nyaope situation there is the additional component of the criminal activities of the user in order to support their habit which is complicating the issue. Law enforcement is important for the survival and functioning of any community. Without proper law enforcement there will be anarchy as is sometimes experienced in South Africa with communities taking matters into their own hands fighting against the drugs (nyaope specifically) in their community. An example of communities getting mobilized was the march in Sharpville (July 2015) where community members voiced their grievances by presenting a memorandum at the police station. The plight of the addicts was also expressed with these words: “We
need help! We are human and we want to live normal lives” (Parys Gazette, 2015) and “Consider our plight” as reported by Mokwena (2015b). Also, nyaope addicts in Ekangala east of Pretoria did not wait for the government, but started their own initiative by turning a local community hall into a Rehabilitation centre to attract the attention of the provincial government (Stuurman, 2014). However, the extent to which this approach is successful is not known.

The complex problem of legislation and drug abuse is well described by van Kerken (2013) who stated: “They are now criminalising someone with a health issue, and that suddenly becomes a human rights issue. The problem is that we are fighting a lost war against drugs and not combating the actual problems – society has changed rapidly and the substance is no longer the problem, addiction is”. However, his approach remains an idea and a view until it is tested by scientific studies.

The South African NDMP that is implemented by the Department of Social Development acknowledges that “no single approach such as criminalising or decriminalising substances or abusers would solve the problem of substance abuse” (NDPM, 2010). The NDMP also identified three pillars, namely demand reduction, supply reduction and harm reduction that are needed for a successful drug intervention. The results from this study could be applied to the third pillar (harm reduction) which can be achieved by treatment, aftercare and reintegration of substance abusers/dependents into society (Hodza, 2014).

Nyaope has its own additional challenges because of our poor understanding of nyaope as a drug, the large numbers of addicts, the socioeconomic status of the users and the inability of the mental health services to provide them with necessary assistance in the form of rehabilitation services which should include tailor-made detoxification (Mokwena, 2015a). Because of the huge number of nyaope users versus availability of rehabilitation facilities and resources, Mokwena (2015a) proposes a community-based rehabilitation model that would be able to accommodate groups of people rather than individuals. Part of such a strategy should be the consideration of the LOC orientation of the user before the implementation of such a tailor-made intervention programme.

5.6 POSSIBLE ALTERNATIVE SOLUTIONS
Research has been done on the possibility of a vaccine against illicit drugs such as cocaine and heroin. The principle behind the vaccine is that the human body would produce antibodies against the drugs contained in the vaccine. The role of the antibodies would then be to biochemically block the drugs from creating a “high” in the user, thereby eliminating the incentive to use the drugs in the first place. Although this research is opening a whole new field of possibilities on how to deal with drug abuse, the
fact is that there are so many other factors that are playing a role in drug abuse that critics are dubious if biochemistry alone will be able to solve the problem of drug abuse (Arnold, 2015).

5.7 RECOMMENDATIONS
From the results it is clear that due to the complex, multi-faceted problems that South Africa is facing with regard to nyaope addiction, there is an urgent need for the prevention and management of nyaope abuse in South Africa. The key recommendations from the findings from this nyaope study conducted in Gauteng include the following:

Education system:
Nyaope awareness should be integrated into the schooling system and the prevalence of nyaope use in schools has to be measured and monitored as the resulting dropping-out from school due to nyaope use affects the education of a whole generation of young South Africans.

Teachers should be empowered with the knowledge and skills on how to handle the academic, behavioural and social problems of the learners who use drugs as this is the first opportunity to do health education and health promotion in order to change the behaviour of a nyaope user.

National prevention programmes, which are age, gender and culture sensitive, must be designed for all learners addressing peer pressure specifically as peer pressure plays a big role in drug experimentation.

The utilization of previous drug users should be considered to educate learners about the dangers of using drugs as the participants in this study clearly indicated that the once-off or short-term awareness school programmes of “Don’t do drugs” did not work for them.

Community level:
Recreation centres and initiatives to keep the out of work youth busy are a necessity, but job creation should be a priority as most of the participants blamed their use of nyaope on boredom.

As drug abuse is still a subject that is not well understood by the majority of people, workshops, meetings and or open days must be held where the community, parents and children should be educated on the dangers of drug abuse, ensuring them that drug addiction is a preventable disease.

The parents and community have to be empowered and educated to enable them to provide proper support for the affected children when they come back into the community after completing a rehabilitation programme.
Rehabilitation services:

Treatment services should be accessible for all, including the disadvantaged who can’t pay for their treatment. Specific integrated programmes, which should include issues related to mental health, personal behaviour and on how to deal with the social environment, must be developed for those at risk or those who are already experimenting with drugs. As shown by the results of this study, the testing of the nyaope user for his/her LOC orientation before entering into a rehabilitation programme should be considered so that a tailor-made programme can be followed that suits the characteristics of the individual, increasing the success rate of the rehabilitation programmes.

An increase and expansion in the number of treatment facilities available, supported by the necessary human resources (skilled staff, occupational therapists, doctors, nurses, social workers and counsellors), is needed in order to cope with the large number of nyaope addicts.

South Africa is experiencing an increase in unlicensed community rehabilitation centres and NGOs in communities trying to help desperate nyaope addicts. The government should consider supporting those organisations and individuals who are able to prove their success in rehabilitating those asking for help.

Law enforcement:

Stricter law enforcement is needed aimed at drug dealers and also police that are aiding and abetting the increase of young people using nyaope.

Health considerations:

The medication that is used to cope with nyaope withdrawal symptoms should be made more affordable and accessible to the man in the street. This availability could be based on the same principle of providing free condoms to all.

Due to the fact that nyaope users are now injecting the drug, close surveillance for HIV, hepatitis B and C incidence is needed amongst drug users.

Due to the fact that drug users are sharing their “joints”, there is a fear that they might be spreading diseases like TB as was mentioned by one of the participants. As South Africa has one of the highest TB rates in the world, and the fact that the TB incidence is increasing, drug users have to be monitored and screened for TB and, if found positive, treatment has to be undergone and users have to be counselled on the importance of taking medication, before the spread of TB, multi-drug resistant TB (MDR TB) and extensively drug resistant TB (XDR TB) becomes a global pandemic (WHO, 2010).
5.8 LIMITATIONS
There is a possibility that the participants may have provided responses that could be regarded as socially acceptable rather than their true feelings. By keeping participation anonymous and ensuring confidentiality for participants, this issue was addressed to the best of our ability.

Due to the absence of extensive literature on nyaope, non-academic sources such as websites for treatment providers, newspaper and magazine articles and non-peer-reviewed research reports had to be used. It is acknowledged that some of these literature sources may be unreliable. As an example, it was reported in a newspaper that 1 in 2 children in the average South African home are addicted to drugs or alcohol, or run the risk of becoming addicted (Pienaar, 2011), but as this statement was also covered by another source reporting on South African and global drug statistics (The Naked Truth [TNT], 2012), the statement was included in the text.

No data was collected to link the LOC orientation with the perceived treatment needs of the individual nyaope user, specially those who have experienced a relapse in the past. Further research is needed to establish if the treatment need varies across individuals with an internal LOC orientation and those with an external LOC orientation. Such results could give guidance on how treatment could be adjusted to ensure better treatment outcomes.

5.9 CONCLUSION
In South Africa, substance abuse, nyaope in particular, is one of the most significant health and social problems that affect the nation as a whole. As the typical nyaope user is between 13 and 19 years of age, successful intervention is of the utmost importance as it influences the lives of the future leaders of our country and South African society as a whole.

Due to the large numbers of addicts, the poor understanding of the drug, its composition and effect on the user, the health and rehabilitation services are experiencing countless challenges in dealing with this epidemic. Rehabilitation is a complicated, multi-factorial process offered by professionals aiming to modify the attitude and behaviour of the user. Treatment success is based on a tailor-made, individual treatment program that addresses each patient’s drug abuse patterns and drug-related medical, psychiatric and social problems. But as success rates of less than 3% and drop-out rates of 40% specifically for nyaope were reported, improvement of the rehabilitation rate is a must.

The strong connection between external LOC orientation and addictive behaviour is documented in literature. Knowing the LOC orientation of the drug user could be utilized in predicting the readiness or
willingness of the user to go for treatment and can be used practically by clinicians in predicting the treatment outcomes, depending on the type of treatment the drug user is receiving. Results from this Gauteng study indicate that nyaope users exhibited a higher internal LOC orientation which, according to literature, is an indication that they would benefit from a less structured intervention. By applying a less structured programme, human resources could rather be utilized in the structured interventions resulting in a better success rate for rehabilitation programmes as the programmes could now be tailor-made based on the user’s LOC orientation.

In the words of Oliver Tambo: “A nation that does not take care of its youth has no future and does not deserve one” (Oliver Tambo, African National Congress President, Republic of South Africa, 2009). This motto should be taken to heart when dealing with nyaope addicts, South Africa’s lost generation, and as stated by the late President Nelson Mandela: “We must help empower them to become part of the solution instead of the problem” (Mandela, 1994).
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APPENDIX

APPENDIX 1: QUESTIONNAIRE (ENGLISH)

LOCUS OF CONTROL AMONG NYAOPE USERS IN GAUTENG

Participant study number: ………………………..…[For official use]

General Instructions:

- Please attempt to answer all questions as honestly and consistently as possible. Your personal identity will not be disclosed in this study.
- Remember: Do not reveal your name on the questionnaire as this exercise is confidential, and please give one answer per question unless if multiple answers are required.
- Write clearly or indicate with ‘X’ against appropriate response as applicable.
- The researcher will interview and assist those unable to complete the form without assistance.

NB: There are no good or bad answers in this questionnaire, therefore if you are unsure or do not know an answer, feel free to answer what best describe how you feel.

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<tr>
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<td></td>
<td>iii) Divorced</td>
<td>[ ] 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iv) Widowed</td>
<td>[ ] 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>v) Co-habiting</td>
<td>[ ] 5</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>What is your highest level of education?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) No formal schooling</td>
<td>[ ] 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii) Primary School</td>
<td>[ ] 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii) High School</td>
<td>[ ] 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iv) Diploma, or certificate</td>
<td>[ ] 4</td>
<td></td>
</tr>
</tbody>
</table>
### What is your employment status?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholar (school)</td>
<td>1</td>
</tr>
<tr>
<td>Student (university/college)</td>
<td>2</td>
</tr>
<tr>
<td>Unemployed</td>
<td>3</td>
</tr>
<tr>
<td>Self-employed</td>
<td>4</td>
</tr>
</tbody>
</table>

### Who supports you financially?

<table>
<thead>
<tr>
<th>Option</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>1</td>
</tr>
<tr>
<td>Spouse</td>
<td>2</td>
</tr>
<tr>
<td>Friends</td>
<td>3</td>
</tr>
<tr>
<td>Relatives</td>
<td>4</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>5</td>
</tr>
</tbody>
</table>

### What is your religion?

<table>
<thead>
<tr>
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<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christian</td>
<td>1</td>
</tr>
<tr>
<td>Hindu</td>
<td>2</td>
</tr>
<tr>
<td>Islam</td>
<td>3</td>
</tr>
<tr>
<td>African traditional</td>
<td>4</td>
</tr>
<tr>
<td>Jewish</td>
<td>5</td>
</tr>
<tr>
<td>Rastafarian</td>
<td>6</td>
</tr>
<tr>
<td>None</td>
<td>7</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>8</td>
</tr>
</tbody>
</table>

### SECTION B: SUBSTANCE ABUSE

<table>
<thead>
<tr>
<th>Question</th>
<th>RESPONSE</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>At what age did you start using substances? (first time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you ever smoked, chewed or sniffed any TOBACCO products such as cigarettes, cigars, pipe tobacco, chewing tobacco?</td>
<td>[Yes]</td>
<td>1</td>
</tr>
<tr>
<td>[No]</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Have you ever drunk any ALCOHOLIC BEVERAGES including beer, wine and spirits?</td>
<td>[Yes]</td>
<td>1</td>
</tr>
<tr>
<td>[No]</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Have ever taken any CANNABIS (marijuana, pot, hashish, grass, bhang, ganja)?</td>
<td>[Yes]</td>
<td>1</td>
</tr>
<tr>
<td>[No]</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Have you ever taken any AMPHETAMINES or other STIMULANTS (uppers, speed, pep pills, diet pills) without a doctor or health worker telling you to do so?</td>
<td>[Yes]</td>
<td>1</td>
</tr>
<tr>
<td>[No]</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Have you ever SNIFFED OR INHALED THINGS such as glue, aerosol, sprays or other gasses to get high?</td>
<td>[Yes]</td>
<td>1</td>
</tr>
<tr>
<td>[No]</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Have you ever taken any TRANQUILLIZERS (Librium, Valium, Miltown) without a doctor or health worker telling you to do so?</td>
<td>[Yes]</td>
<td>1</td>
</tr>
<tr>
<td>[No]</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Have you ever taken any SEDATIVES (barbiturates, downers, goofballs, Seconal) without a doctor or health worker telling you to do so?</td>
<td>[Yes]</td>
<td>1</td>
</tr>
<tr>
<td>[No]</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Options</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>16</td>
<td>Have you ever smoked or eaten any <strong>OPIUM</strong> without a doctor or health worker telling you to do so?</td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>17</td>
<td>Have you ever taken any <strong>HEROIN</strong> (horse, smack, H)?</td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>18</td>
<td>Have you ever taken <strong>NYAOPE</strong> (Sugars, Whoonga, Ungah, Pinc, Plazana, Thai)?</td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>19</td>
<td>What was the substance that you first used?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Cannabis / dagga</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>ii) Alcohol</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>iii) Cocaine</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>iv) Heroin</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>v) Tik</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>vi) Nyaope</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>vii) Khat</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>viii) Glue</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>ix) Benzine</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>x) Cigarettes</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>xi) Other (please specify)</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>What drugs are you currently admitted for?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Cannabis / dagga</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>ii) Alcohol</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>iii) Cocaine</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>iv) Heroin</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>v) Tik</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>vi) Nyaope</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>vii) Khat</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>viii) Glue</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>ix) Benzine</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>x) Cigarettes</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>xi) Other (please specify)</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>With whom do you usually use substances?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Friends</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>ii) Family members</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>iii) Work colleagues</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>iv) School/university mates</td>
<td>[     ]</td>
</tr>
<tr>
<td></td>
<td>v) Alone</td>
<td>[     ]</td>
</tr>
<tr>
<td>22</td>
<td>When you first started using nyaope, did you know what it was?</td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>23</td>
<td>How long have you been using nyaope?</td>
<td>&lt; 1 year  1-2 years &gt;2 years</td>
</tr>
<tr>
<td>24</td>
<td>Have you ever been admitted to rehabilitation to stop using nyaope?</td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>25</td>
<td>If yes, how long were you able to remain clean after rehabilitation?</td>
<td>&lt; 1 year  1-2 years &gt;2 years</td>
</tr>
</tbody>
</table>
Have you been arrested because of nyape related actions?  
[Yes]  
[No]  
1  

SECTION C: OPINIONS ABOUT DRUGS AND DRUG USE

Each item consists of a pair of alternatives marked with A or B.  
♦ Select the alternative with which you most agree (only one, not both).  
♦ If you believe both alternatives to some extent, select the one with which you most strongly agree.  
♦ If you do not believe either alternative, mark the one with which you least strongly disagree.  
♦ Be sure to select the answer that you actually believe to be true not the one that you would like to be true.  
Since this is an assessment of opinions, there are obviously no right or wrong answers.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>RESPONSE</th>
<th>CODE</th>
</tr>
</thead>
</table>
| 27       | a. Everybody has a choice as to whether they take drugs or not; what other people say or do has nothing to do with it.  
          | b. There is often a lot of pressure from peers to join in and use drugs. | [ A ] 1  
          | [ B ] 2 |
| 28       | a. It is difficult to resist drinking at a party where everybody is enjoying the booze.  
          | b. There should be no problems resisting temptations to drink on a night out if somebody has made up their mind beforehand that they don’t want to drink | [ A ] 1  
          | [ B ] 2 |
| 29       | a. Those who are successful in getting off drugs are often the lucky ones.  
          | b. Getting off drugs depends upon lots of effort and hard work; luck has nothing to do with it. | [ A ] 1  
          | [ B ] 2 |
| 30       | a. For people who are addicted to drugs, it is impossible to stop taking drugs for good.  
          | b. By taking an active part in a treatment program, it is possible to learn to control the use of drugs. | [ A ] 1  
          | [ B ] 2 |
| 31       | a. Drugs bring out the bad side of people, making them do things that they later regret.  
          | b. People who have become addicted to drugs have to take responsibility for their drug problems. | [ A ] 1  
          | [ B ] 2 |
| 32       | a. There is no such thing as an irresistible temptation to take drugs.  
          | b. There are people who experience strong irresistible urges to take drugs that they cannot control | [ A ] 1  
          | [ B ] 2 |
| 33       | a. Only when people come to terms with the long-term effects the drugs have on their lives, are they able to change their behaviour and give up drugs for good.  
          | b. Drugs are so powerful; just knowing that they are around undermines all good intentions of giving up. | [ A ] 1  
          | [ B ] 2 |
| 34       | a. The idea that people are driven to take drugs because of peer pressure is nonsense.  
          | b. People are unaware of their friends’ influence when taking drugs. | [ A ] 1  
          | [ B ] 2 |
| 35       | a. Feelings of helplessness and anxiety drive people to drink or to take drugs.  
          | b. The idea that people use drugs or drink alcohol to cope with feelings of anxiety is just an excuse for their behaviour. | [ A ] 1  
          | [ B ] 2 |
| 36       | a. There isn’t such a thing as an addictive personality. | [ A ] 1  
<pre><code>      |
</code></pre>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 37 | a. For people who have known drugs for all their lives, it is almost impossible to break away because they cannot compare drugs to anything else.  
  b. There is a direct connection between how hard people try and how successful they are in getting off drugs. | [B]  
 2 |
| 38 | a. Everybody can pull themselves together and fight the urge to drink or to take drugs.  
  b. There are people who feel completely helpless when it comes to resisting taking drugs. | [A]  
 1 |
| 39 | a. Anybody can become addicted to drugs when they get off the straight and narrow.  
  b. Drug use is an excuse for not doing the things that you are supposed to do. | [A]  
 1 |
| 40 | a. Addiction is for life: once contracted, it will never go away, no matter what you do.  
  b. Successful recovery from addiction is possible but it is hard work. | [B]  
 2 |
| 41 | a. If people want something badly enough, they can make it happen; they can even beat addiction.  
  b. People with addictive personalities will always be addicted to something; if they stop using drugs they start using something else. | [A]  
 1 |
| 42 | a. No one is in control of what they do when drunk or drugged up.  
  b. With enough effort, everybody is able to control what they do. | [A]  
 1 |
| 43 | a. I feel so helpless in some situations that I need to get high  
  b. Abstinence is just a matter of deciding that I no longer want to use drugs | [A]  
 1 |
| 44 | a. I have the strength to withstand pressures at work or home  
  b. Trouble at work or home drives me to use drugs | [B]  
 2 |
| 45 | a. Without the right breaks you cannot stay clean  
  b. Drug abusers who are not successful in curbing their drug use often have not taken advantage of help that is available | [A]  
 1 |
| 46 | a. There is no such thing as an irresistible temptation to use drugs.  
  b. Many times there are circumstances that force you to use drugs. | [A]  
 1 |
| 47 | a. I get so upset over small arguments that they cause me to use drugs  
  b. I can usually handle arguments without using drugs | [B]  
 2 |
| 48 | a. Successfully kicking substance abuse is a matter of hard work, luck has little or nothing to do with it  
  b. Staying clean depends mainly on things going right for you | [A]  
 1 |
| 49 | a. When I am at a party where others are using, I can avoid taking drugs  
  b. It is impossible for me to resist drugs if I am at a party where others are using | [B]  
 2 |
| 50 | a. I feel powerless to prevent myself from using drugs when I am anxious or unhappy.  
  b. If I really wanted to, I could stop using drugs | [A]  
 1 |
1. It is easy for me to have a good time when I am sober
   b. I cannot feel good unless I am high.  
   | A | 1 |

2. a. I have control over my drug use behaviors
   b. I feel completely helpless when it comes to resisting drugs
   | A | 1 |

3. a. Sometimes I cannot understand how people can control their drug use.
   b. There is a direct connection between how hard people try and how successful they are in stopping their drug use
   | A | 1 |

4. a. I can overcome my urge to use drugs.
   b. Once I start to use drugs I can’t stop
   | A | 1 |

5. a. Drugs aren’t necessary in order to solve my problem
   b. I just cannot handle my problems unless I get high first
   | A | 1 |

6. a. Most of the time I can’t understand why I continue to use drugs.
   b. In the long run I am responsible for my drug problems
   | A | 1 |

7. a. Taking drugs is my favourite form of entertainment.
   b. It wouldn’t bother me if I could never use drugs again
   | A | 1 |

THANK YOU FOR YOUR TIME
APPENDIX 2: QUESTIONNAIRE (SETSWANA)
LOCUS OF CONTROL AMONG NYAOPe USERS IN GAUTENG

Participant study number……………………………………………………[For official use]

General Instructions:

- Leka go araba dipotso tsotlhe ka bonnete le ka tatelano fa go kgonagala. Ga re kake ra dirisa kitso ka ga wena mo thutong e.
- Gopola: O se ke wa thagisa leina la gago mo dipotsong tse jaaka se ke tiragalo e naleng bokao ba sephiri, mme re kopa o re fe karabo e le ngwe go potso engwe le engwe kgotsa o ka re fa dikarabo tse ding fa e le gore di ya thokagala.
- O kwale go bongala kgotsa o supetse ka ‘X’ go karabo e e leng yone e thokagalang.
- Mmatlisisi o tla buisana le go thusa ba ba palwang go feleletsa foromo kantle le thuso.

NB: Ga gona dikarabo tse siameng le tse sa siamang fa dipotdeng tse, mme fa o sena bonnete kgotsa o sa itsi karabo, o ikutlwe o lokologile ka go fan aka karabo e thalosang jaaka o ikutlwa.

SECTION A: DEMOGRAPHIC DATA

<table>
<thead>
<tr>
<th>No</th>
<th>QUESTION</th>
<th>RESPONSE</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>O nale dijara tse kae?</td>
<td>[___</td>
<td>___] kwala dingwaga</td>
</tr>
<tr>
<td>2</td>
<td>Bong ba gago ke bo fe?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Mosadi</td>
<td>[     ]</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ii) Monna</td>
<td>[     ]</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Maemo a gago a lenyalo a ntse jang?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Ga wa nyala/nyalwa</td>
<td>[     ]</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ii) O nyetse?nyetswe</td>
<td>[     ]</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>iii) O thadile/thadiwe</td>
<td>[     ]</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>iv) O thokofaletswe</td>
<td>[     ]</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>v) Le dula mmogo le sa nyalana</td>
<td>[     ]</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>O felletse kae ka tsa dithuto?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Ga kea tsena sekolo</td>
<td>[     ]</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ii) Sekolo se kwa tlase</td>
<td>[     ]</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>iii) Sekolo se kwa godimo</td>
<td>[     ]</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>iv) Diploma kgotsa setifikate</td>
<td>[     ]</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>v) Degree kgotsa godimo</td>
<td>[     ]</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Maemo a gago a tiro ke a feng?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) O moithuti (sekolong)</td>
<td>[     ]</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ii) O moithuti (unibesithi/college)</td>
<td>[     ]</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>iii) Ga o diri</td>
<td>[     ]</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>iv) Wa ipereka</td>
<td>[     ]</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>O thegiwa ke mang ka dichelete?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Wena</td>
<td>[     ]</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ii) Molekane</td>
<td>[     ]</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>iii) Ditsala</td>
<td>[     ]</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>iv) Masika</td>
<td>[     ]</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>v) Ba bang (thalosa)</td>
<td>[     ]</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Tumelo ya gago ke e feng?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### SECTION B: SUBSTANCE ABUSE

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>RESPONSE</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>O simollotse go dirisa diritibatsi o nale dingwaga tse kae? (ga nthla)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A o kile wa goga, thafuna kgotsa sunnetsa se seng sa METSOKO jaaka sekerete, peipe ya motsoko, thafuna motsoko?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
<tr>
<td>A o kile wa nwa se seng sa DINOTAGI go balela bojalwa, veine le dispiriti?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
<tr>
<td>A o kile wa tsaya se seng sa MATEKWANE (marijuana, motekwane, hashish, thaga, bhang, ganja)?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
<tr>
<td>A o kile wa tsaya se seng sa diritibatsi tsa di AMPHETAMINES kgotsa diritibatsi tse dingwe (uppers, speed, pipe ya dipilisi, dipilisi tsa diet) kontle ga go bolelwa ke ngaka kgotsa moberiki wa tsa maphelo?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
<tr>
<td>A o kile wa SUNNETSA KGOTSWA WA HEMELA DINGWE jaaka glue, aerosol, kgotsa digase tse dingwe gore o tle o tagwe?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
<tr>
<td>A o kile wa tsaya se seng sa di TRANQUILIZER (Librium, Valium, Miltown) kontle ga go bolelwa ke ngaka kgotsa moberiki wa tsa maphelo?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
<tr>
<td>A o kile wa tsaya se seng sa di SEDATIVE (barbiturates, downers, goofballs, Seconal) kontle ga go bolelwa ke ngaka kgotsa moberiki wa tsa maphelo?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
<tr>
<td>A o kile wa goga kgotsa wa ja se seng sa di OPIUM kontle ga go bolelwa ke ngaka kgotsa moberiki wa tsa maphelo?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
<tr>
<td>A o kile wa tsaya se seng sa di HEROIN (horse, smack, H)?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
<tr>
<td>A o kile wa tsaya NYAOPE (Sugars, Whoonga, Ungah, Pinc, Plazana, Thai)?</td>
<td>[Eya]</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Seritibatsi se o se dirisitseng ganthla ke se feng?

<table>
<thead>
<tr>
<th>Seritibatsi se o se dirisitseng ganthla ke se feng?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Motekwane/dagga</td>
<td>1</td>
</tr>
<tr>
<td>ii) Notagi</td>
<td>2</td>
</tr>
<tr>
<td>iii) Cocaine</td>
<td>3</td>
</tr>
<tr>
<td>iv) Heroin</td>
<td>4</td>
</tr>
<tr>
<td>v) Tik</td>
<td>5</td>
</tr>
<tr>
<td>vi) Nyaope</td>
<td>6</td>
</tr>
<tr>
<td>vii) Khat</td>
<td>7</td>
</tr>
<tr>
<td>viii) Glue</td>
<td>8</td>
</tr>
<tr>
<td>ix) Benzine</td>
<td>9</td>
</tr>
<tr>
<td>x) Disekerete</td>
<td>10</td>
</tr>
<tr>
<td>xi) Tse dingwe (thalosa)</td>
<td>11</td>
</tr>
</tbody>
</table>

Ke diritibatsi tse feng tse dirileng gore o bo o le
| i)  | Motekwane/dagga | [ ] | 1 |
| ii) | Notagi          | [ ] | 2 |
| iii) | Cocaine        | [ ] | 3 |
| iv) | Heroin         | [ ] | 4 |
| v)  | Tik             | [ ] | 5 |
| vi) | Nyaope          | [ ] | 6 |
| vii) | Khat            | [ ] | 7 |
| viii) | Glue            | [ ] | 8 |
| ix)  | Benziné        | [ ] | 9 |
| x)   | Disekerete      | [ ] | 10 |
| xi)  | Tse dingwe ( thalosa) | [ ] | 11 |

21. O dirisa diritibatsi gantsi le mang?  
   i)  Ditsala          [ ] | 1 |
   ii) Lelapa           [ ] | 2 |
   iii) Babereki mmogo  [ ] | 3 |
   iv) Bao o tsenang sekolo le bone [ ] | 4 |
   v)  O le mongwe      [ ] | 5 |

22. Fa o simolla go dirisa nyaope, a o ne o itsi gore ke eng?  
   [Eya] [Nya] 1 2

23. Ke sebaka se se ka o dirisa nyaope?  
   < 1 ngwaga | 1-2 dingwaga | >2 dingwaga

24. A o kile wa amogelwa go rehabilitation go thibela tiriso ya nyaope?  
   [Eya] [Nya] 1 2

25. Fa gontse jalo, o ne wa kgona gonna se se ka o sa dirisi diritibatsi morago ga rehabilitation?  
   < 1 ngwaga | 1-2 dingwaga | >2 dingwaga

26. A o kilwe wa tshwarwa ka ntiha e riling ya nyaope?  
   [Eya] [Nya] 1 2

SECTION C: OPINION ABOUT DRUGS AND DRUG USE

Karolo engwe le engwe e nale sethopa se se kwetswe A kgotsa B.

- Tlhopa nthla e o ka dumelana le yone (e le ngwe, e seng di le pedi).
- Fa e le gore o dumelana le dintlha ka bobedi, tlhopa e le ngwe e o dumalanang thata le yone.
- Fa e le gore ga gona nthla epe e o dumelanang le yone, tlhopa e o sa dumelaneng thata le yone.
- Nnelefatsa gore o thopile karabo e o tshepang gore ke nnete e seng e o ka raling gore e ka nna nnete.

Ka gore se ke thagiso ya kakanyo, ga gona dikarabo tse di siameng kgotsa tse di sa siamang.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>RESPONSE</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 a.</td>
<td>Batho botlhe ba nale boikgethelo ka go dirisa diritibatsi kgotsa go se di dirise; se se buang kgotsa se ba se dirang ga sena mosola ka se.</td>
<td>[A]</td>
</tr>
<tr>
<td>b.</td>
<td>Gantsi go nale kgatello go tswa go bankane gore o tse karolo le go dirisa diritibatsi</td>
<td>[B]</td>
</tr>
<tr>
<td>28 a.</td>
<td>Go thata go ikgatholosa notagi fa o le ko moletlong mo batho botlhe ba itisa ka bojalwa.</td>
<td>[A]</td>
</tr>
<tr>
<td>b.</td>
<td>Ga goa tshwanela go nna le mathata ka go ikgatholosa mo go nweng bosigong o tswile le mongwe yo a ipoleletseng kwa ntheng gore ga a na go nwa.</td>
<td>[B]</td>
</tr>
<tr>
<td></td>
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<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>29</td>
<td>a. Gantsi ba ba kgonang go tswa mo diritibatsing ka bao ba bale lethogonolo.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Go tswa mo tirsong ya diribatsi go itshekegile mo go direng maetekoa. a mantis le le go bereka ka thata; lethogonolo ga le na seabe fa.</td>
<td>[B]</td>
</tr>
<tr>
<td>30</td>
<td>a. Go batho ba naleng kgathello ya diritibatsi, ga gona kgonagalo ya gore ba ka tlhogela diritibatsi go ya go ile.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Ka go tsaya karolo mo progama ya phepo, go a kgonagala gore o ka ithuta go tsamaisa tiriso ya diritibatsi</td>
<td>[B]</td>
</tr>
<tr>
<td>31</td>
<td>a. Diritibatsi di bonagatsa lethakore le le sa siamang la batho, di dira gore batho ba dire dilo tse ba ka iphitihela kgantele ba itsiwa go di di.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Batho ba ba naleng kgathello ya diritibatsi ba tshwanetse go tsaya maikarabelo ka mathata a tiriso ya bone ya diritibatsi.</td>
<td>[B]</td>
</tr>
<tr>
<td>32</td>
<td>a. Ga gona selo jaaka teko e o ka se ikgatolle go yone mo go tseyeng diritibatsi.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Go nale batho ba kgonang thato go ikgatholosa ka go tsaya diritibatsi tseo ba sa kgoneng go di laola.</td>
<td>[B]</td>
</tr>
<tr>
<td>33</td>
<td>a. Fapatho ba lemoega morago ga sebaka se se telebe boleng ba diritibatsi go matsheko a bone, a ba kgona go fetola mokgwa o le go tlogela diritibatsi go ya go ile.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Diritibatsi di nale matla, ka go itsi fela gore di teng gau fe ketefaletsa maleka a go di tiogela.</td>
<td>[B]</td>
</tr>
<tr>
<td>34</td>
<td>a. Kakanyo ya gore batho ba nale kgogedi ya go tsaya diritibatsi ka ntsha ya kgatello go bankane ga e na boleng.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Batho ga ba lemoega boleng go ditsala tsa bone fa ba tsaya diritibatsi.</td>
<td>[B]</td>
</tr>
<tr>
<td>35</td>
<td>a. Maikutlo a go thokha thuos kgotso go sa nnisega moeng a gogela batho mo go nweng kgotsa go tsaya diritibatsi.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Kakanyo ya gore batho ba dirisa diritibatsi kgotsa go nwa bojalwa gore batle ba kgone go ikgatholosa maikutlo a sa nnisegang ke boipato fela go mokgwa wa bone.</td>
<td>[B]</td>
</tr>
<tr>
<td>36</td>
<td>a. Ga go sepe jaaka mokgwa wa kgatello.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Go sa tseye karolo mo diritibatsing go ithegile go dilo tse di go tsamengent se.</td>
<td>[B]</td>
</tr>
<tr>
<td>37</td>
<td>a. Go batho b aba itseng diritibatsi botshelo ba bone botle, go batlle go san ne le kgonagalo ya go ikgatholosa gonne ga ba kgonne go lebagana diritibatsi le se sengwe.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Go nale kopanyo e thomameng magareng ga mokgwa o batho ba lekang ka thata le ka mo ba ka tswelela go tswa mo go diriseng diritibatsi.</td>
<td>[B]</td>
</tr>
<tr>
<td>38</td>
<td>a. Batho bothe ba kgona go ikgorometsa le go lwantsha maikutlo a go batla go nwa kgotsa go tsaya diritibatsi.</td>
<td>[A]</td>
</tr>
<tr>
<td></td>
<td>b. Go nale batho ba ba ikutlwang ba sena thuso ka go</td>
<td>[B]</td>
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<td></td>
<td></td>
<td></td>
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<td>---</td>
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<td>---</td>
</tr>
</tbody>
</table>
| 39 | **a.** Mang le mang a ka tswa mo go diriseng diritibatsi fa ba ka tsepama le go thamalla.  
**b.** Tiriso ya diritibatsi ke boipato ba go sa dire dilo tse o tshwanetseng go di dira. | [A] 1  
[B] 2 |
| 40 | **a.** Kgatello ya diritibatsi kea botshele bothe: fa o simollotse, ga go ka ke go o bokhuthong, le fa o ka dira eng kapa eng.  
**b.** Tswellopele ya go ikgatholosa kgatello e ya kgonagala mme go bokete. | [A] 1  
[B] 2 |
| 41 | **a.** Fa batho ba batla sengwe mo go maswe, ba kgona go dira go re se diragale; ebile b aka kgona go lwantshana kgatello.  
**b.** Batho b abaa nale mekgwa ya kgatele bat la dula ba nale kgatello go sengwe; fa ba tlogela go dirisa diritibatsi ba simolla go dirisa se sengwe gape. | [A] 1  
[B] 2 |
| 42 | **a.** Ga go ope o leng mo taolog fa a nolwe kgotsa a tagiliwe ke diritibatsi.  
**b.** Ka matsapa a lekaneng, batho botthe ba kgona go laola se ba se dirang. | [A] 1  
[B] 2 |
| 43 | **a.** Ke ikutlwa ke sena thuso go ditiragalo tse dingwe gore ke nne le lhoko ya go tagwa.  
**b.** Go ikgatholosa go mbapabi a go tsaya tshwetsa ya gore ga ke sa thole ke batla go tsaya diritibatsi | [A] 1  
[B] 2 |
| 44 | **a.** Ke nale bokgoni ba go ikgatholosa go dikgatello kwa tirong kgotsa kwa gae  
**b.** Diteko kwa tirong kgotsa kwa gae dinkgoromeletsa go diriseng diritibatsi | [A] 1  
[B] 2 |
| 45 | **a.** Kontle ga boikgatholoso bo bo siameng ga o ka ke wa kgona go nna phepha.  
**b.** Badirisi ba diritibatsi ba ba sa tswelelenk ga go lwantsha tiriso ya bone ya diritibatsi gantsi ga isi ba tseye tetla ya go dirisa thuso e e neilweng | [A] 1  
[B] 2 |
| 46 | **a.** Ga gona sepe fa go ka twe ga o kgone go ikgatholosa go teko ya go dirisa diritibatsi  
**b.** Gantsi go nale maemo a go gateang go diriseng diritibatsi | [A] 1  
[B] 2 |
| 47 | **a.** Ke nale go utlwa bothoko go dipuisano tse dinyane tse di nitrang gore ke batle go dirisa diritibatsi  
**b.** Gantsi ke nale bokgoni ba go tsamaisa dipuisano kontle ga go dirisa diritibatsi | [A] 1  
[B] 2 |
| 48 | **a.** Tswellopele ya go raga kgatello ya diritibatsi ke tiro e thata, lethogonolo ga le na seabe se se nye kgotsa sepe go dira legone  
**b.** Go dula o phephile go ithekgile mo dilong tse di go tsamaelaeng sentle | [A] 1  
[B] 2 |
| 49 | **a.** Fa ke le ko moletlong o naleng bangwe ba ba dirisang, ke kgona go ikgatholosa go diriseng diritibatsi  
**b.** Ga gona kgonagalo ya gore ke ikgatholose go diriseng diritibatsi fa ke le ko moletlong o naleng bangwe ba ba dirisang | [A] 1  
[B] 2 |
<p>| 50 | <strong>a.</strong> Ke ikutlwa ke sena matla ka go ikgatholosa go diriseng diritibatsi fa ke sa nnisega kgotsa ke sa | [A] 1 |</p>
<table>
<thead>
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<tbody>
<tr>
<td>itumela.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Fa ke ne ke batla ke ne ke tla tlogela go dirisa diritibatsi</td>
<td>[B]</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>a. Go bonolo gore ke nne le nako e monate ke sa tagwa</td>
<td>[A]</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b. Ga ke kgone go ikutlwa ke ja monate kontle ga go sa tagwe</td>
<td>[B]</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>a. Ke kgona go laola mokgwa wame wa tiriso ya diritibatsi</td>
<td>[A]</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b. Ke ikutlwa ke sena thuso ka go ikgatholosa go diritibatsi</td>
<td>[B]</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>a. Dinako tse dingwe ga ke kgone go thalolanya gore batho ba kgona go laola jang tiriso ya diritibatsi</td>
<td>[A]</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b. Go nale kopanyo e thomameng magareng ga mokgwa o batho ba lekang ka thata le ka mo ba ka tsweletsa go tswa mo go tlogeleng diritibatsi.</td>
<td>[B]</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>a. Ke kgona go ikgatolosa go keletso yame ya diritibatsi</td>
<td>[A]</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b. Fa ke simolola go dirisa diritibatsi ga ke kgone go tlogela</td>
<td>[B]</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>a. Diritibatsi ga di thokege mo go raraboleng mathata ame</td>
<td>[A]</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b. Ga ke kgone go rarabolla mathata ame</td>
<td>[B]</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>a. Gantsi ga ke kgone go thalolanya gore keng tswelela go dirisa diritibatsi</td>
<td>[A]</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b. Mo nakong e tleng ke nale boikarabelo ba mathata ame a diritibatsi</td>
<td>[B]</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>a. Go tsaya diritibatsi ke tsela yame e ke e ratang thata ya go itisa</td>
<td>[A]</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b. Ga go ka ke gwa ntshwenya fa ke ka tlogela go dirisa diritibatsi gape</td>
<td>[B]</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### APPENDIX 3: QUESTIONNAIRE ENGLISH (FINAL)

#### LOCUS OF CONTROL AMONG NYAOPe USERS IN GAUTENG

Participant study number: ...........................................[For official use]

**General Instructions:**

- Don’t write your name on this questionnaire.
- Please mark your response with a tick or a circle.
- The researcher will interview and assist those unable to complete the form without assistance.

**NB:** Remember there are no good or bad answers in this questionnaire, therefore if you are unsure or do not know an answer, feel free to answer what best describe how you feel.

<table>
<thead>
<tr>
<th>No</th>
<th>QUESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How old are you?</td>
</tr>
</tbody>
</table>
| 2  | What is your gender?  
Female  
Male |
| 3  | What is your relationship status?  
Single  
Married  
Got a girlfriend/boyfriend |
| 4  | What level of education have you finished?  
No formal schooling  
Primary school grade  
High school grade  
Tertiary education  
Other |
| 5  | Do you have a job?  
Yes  
No |
| 6  | Who supports you financially?  
Self  
Spouse  
Friends  
Relatives  
Parents  
Other (please specify) |
| 7  | What is your religion? |
| 8  | How old were you when you started using drugs? |
| 9  | Have you ever smoked **TOBACCO**? (cigarettes, cigars, pipe tobacco, chewing tobacco)?  
[Yes]  
[No] |
| 10 | Have you ever drunk **ALCOHOL**?  
[Yes] |
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Have ever taken any <strong>CANNABIS?</strong> <em>(marijuana, pot, hashish, grass, bhang, ganja, dagga)</em></td>
</tr>
<tr>
<td></td>
<td>[No]</td>
</tr>
<tr>
<td>12</td>
<td>Have you ever used <strong>SNIFFED OR INHALED THINGS</strong> to get high? <em>(glue, aerosol, sprays or other gasses)</em></td>
</tr>
<tr>
<td></td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>13</td>
<td>Have you ever taken any <strong>MEDICATION</strong> to get high? <em>(pills, cough mixture)</em></td>
</tr>
<tr>
<td></td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>14</td>
<td>Have you ever taken any <strong>HEROIN?</strong> <em>(horse, smack, H)</em>?</td>
</tr>
<tr>
<td></td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>15</td>
<td>What was the very first substance that you used? (tick only one)</td>
</tr>
<tr>
<td></td>
<td>Cannabis / dagga</td>
</tr>
<tr>
<td></td>
<td>Alcohol</td>
</tr>
<tr>
<td></td>
<td>Cocaine</td>
</tr>
<tr>
<td></td>
<td>Heroin</td>
</tr>
<tr>
<td></td>
<td>Tik</td>
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<td></td>
<td>Nyaope</td>
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<td>Khat</td>
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<td></td>
<td>Glue</td>
</tr>
<tr>
<td></td>
<td>Benzine</td>
</tr>
<tr>
<td></td>
<td>Cigarettes</td>
</tr>
<tr>
<td></td>
<td>Other (please name them)</td>
</tr>
<tr>
<td>16</td>
<td>Tick all the drugs that you have used in the past?</td>
</tr>
<tr>
<td></td>
<td>Cannabis / dagga</td>
</tr>
<tr>
<td></td>
<td>Alcohol</td>
</tr>
<tr>
<td></td>
<td>Cocaine</td>
</tr>
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<td></td>
<td>Heroin</td>
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<td>Tik</td>
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<td></td>
<td>Nyaope</td>
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<td>Glue</td>
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<td></td>
<td>Benzine</td>
</tr>
<tr>
<td></td>
<td>Cigarettes</td>
</tr>
<tr>
<td></td>
<td>Other (please name them)</td>
</tr>
<tr>
<td>17</td>
<td>With whom do you usually use nyaope?</td>
</tr>
<tr>
<td></td>
<td>Friends</td>
</tr>
<tr>
<td></td>
<td>Family members</td>
</tr>
<tr>
<td></td>
<td>Alone</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
<tr>
<td>18</td>
<td>When you first started using nyaope, did you know what it was?</td>
</tr>
<tr>
<td></td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>19</td>
<td>How long have you been using nyaope?</td>
</tr>
<tr>
<td>20</td>
<td>Have you ever tried to stop using nyaope?</td>
</tr>
<tr>
<td></td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>21</td>
<td>If yes, how long were you able to stop?</td>
</tr>
</tbody>
</table>
### Have you been arrested or gone to jail?
- [Yes]
- [No]

### Was the arrest because of you trying to get money to buy nyaope?
- [Yes]
- [No]

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**FOR THE FOLLOWING STATEMENTS CHOOSE THE ONE THAT YOU AGREE WITH THE MOST**

**REMEMBER THERE ARE NO RIGHT OR WRONG ANSWERS**

| 24 | a) Everybody has a choice to take drugs or not, what other people say has nothing to do with it | [ A ] |
| 25 | a) It is difficult not to drink at a party where everybody else is drinking | [ A ] |
| 26 | a) Those who manage to stop using drugs are the lucky one | [ A ] |
| 27 | a) My friends will not be able to force me to use drugs | [ A ] |
| 28 | a) People take drugs because they feel anxious and helpless | [ A ] |
| 29 | a) Anybody can become addicted to drugs when they get off the straight and narrow. | [ A ] |
| 30 | a) Addiction is for life: once you start, it will never go away, no matter what you do. | [ A ] |
| 31 | a) A person fee so helpless in some situations that they need to get high | [ A ] |
| 32 | a) It is hard work to stop using drugs, luck has little or nothing to do with it | [ A ] |
| 33 | a) I feel powerless to prevent myself from using drugs when I am anxious or unhappy. | [ A ] |
| 34 | a) I can overcome my urge to use drugs. | [ A ] |

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| 22 | Have you been arrested or gone to jail? | [Yes] [No] |
| 23 | Was the arrest because of you trying to get money to buy nyaope? | [Yes] [No] |
| 24 | a) Everybody has a choice to take drugs or not, what other people say has nothing to do with it | [ A ] |
| 25 | a) It is difficult not to drink at a party where everybody else is drinking | [ A ] |
| 26 | a) Those who manage to stop using drugs are the lucky one | [ A ] |
| 27 | a) My friends will not be able to force me to use drugs | [ A ] |
| 28 | a) People take drugs because they feel anxious and helpless | [ A ] |
| 29 | a) Anybody can become addicted to drugs when they get off the straight and narrow. | [ A ] |
| 30 | a) Addiction is for life: once you start, it will never go away, no matter what you do. | [ A ] |
| 31 | a) A person feel so helpless in some situations that they need to get high | [ A ] |
| 32 | a) It is hard work to stop using drugs, luck has little or nothing to do with it | [ A ] |
| 33 | a) I feel powerless to prevent myself from using drugs when I am anxious or unhappy. | [ A ] |
| 34 | a) I can overcome my urge to use drugs. | [ A ] |
| 35 | a) Drugs aren't necessary in order to solve my problems | [A] |
|    | b) I just cannot handle my problems unless I get high first | [B] |
| 36 | a) I have control over my drug use | [A] |
|    | b) I feel completely helpless when it comes to resisting drugs. | [B] |
APPENDIX 4: INTERVIEW GUIDE ENGLISH (QUALITATIVE ASPECT)

LOCUS OF CONTROL AMONG NYAOPe USERS IN GAUTENG

1. Tell me about your first experience of nyaope use
   
   Probe: What influenced you to start using nyaope?

2. Explain your pattern of nyaope use
   
   Probe: How often/ what time of the day/ with whom do you use nyaope (if with anyone)?

3. How easy or difficult is it to get nyaope?
   
   Probe: How do you get it? Where do you get it?

4. Tell me how nyaope has affected your life (your family/friends/school/work)
   
   Probe: Can you tell me about instances in which nyaope made you change the way you behaved?

5. What are some of the problems that come with using nyaope?
   
   Probe: What are some of the reasons that make you continue using nyaope?

6. What are your views about using nyaope?
   
   Probe: What are the views of other people you associate with? (Family, friends, colleagues, neighbours)

7. Why do you continue to use nyaope?
   
   Probe: What will make you stop using nyaope?

8. Have you tried stopping to use nyaope? If yes, tell me about it.
   
   Probe: Tell me about your attempts to stop using nyaope

9. In your opinion, what should be done to help nyaope addicts to stop?
   
   Probe: Do people who use nyaope need help? What kind of help? What should be done to stop the sale and of nyaope?

10. What advice would you give to young people who have not yet used nyaope?
APPENDIX 5: INTERVIEW GUIDE (SETSWANA)

LOCUS OF CONTROL AMONG NYAOPE USERS IN GAUTENG

1. Mpolelle ka maitemogelo a gago a nthla fa o simolola go dirisa nyaope
   
   *Probe:* Keng se se go rotlweditseng ka go dirisa nyaope?

2. Tlhalosa ka mokgwa wa tiriso ya gago ya nyaope
   
   *Probe:* Ga kae/ nako mang mo letsatsing/ o dirisa nyaope le mang (ha e le gore go nale mongwe)?

3. Go bonolo kgotsa boima jang go fitlhela nyaope?
   
   *Probe:* O ifithela jang? O ifithela kae?

4. Mpolelle nyaope e amile botshelo ba gago jang (lesika la gago/ditsala/sekolo/tiro)
   
   *Probe:* A o ka mpolella ka maemo a nyaope fa e dirile gore o fetole mokgwa wa gago

5. Ke eng mathata a mang a tlang fa o dirisa nyaope?
   
   *Probe:* Ke mabaka a mang a feng a dirang gore o tswelele ka go dirisa nyaope?

6. Maetemogelo a gago a tiriso ya nyaope a ntse jang?
   
   *Probe:* Maetemogelo a tiriso ya nyaope a batho ba o nnang le bone a ntse jang?

7. Keng fa o tswelela o dirisa nyaope?
   
   *Probe:* Ke eng se se tla go thibela go dirisa nyaope?

8. A o kile wa leka go tlogela go dirisa nyaope? Fa go ntse jalo, mpolelle ka gone.
   
   *Probe:* Mpolelle ka maleka a gago a go tlogela nyaope

9. Ka kakanyo ya gago, go ka diriwa eng go thusa batho ba dirisang nyaope?
   
   *Probe:* A batho ba ba dirisang nyaope ba thoka thuso? Thuso e ntseng jang? Go diriwe eng ka go thibela thekiso ya nyaope?

10. O ka fa basha thotloetso e ntseng jang go ba ba iseng ba dirise nyaope?
APPENDIX 6: FINAL INTERVIEW GUIDE

LOCUS OF CONTROL AMONG NYAOLE USERS IN GAUTENG

1. Tell me about your first experience of nyaope use
   
   **Probe:** What influenced you to start using nyaope?

2. Tell me how nyaope has affected your life (your family/friends/school/work)
   
   **Probe:** Can you tell me about instances in which nyaope made you change the way you behaved?
   
   **Probe:** How has nyaope changed your life?

3. What are some of the problems that come with using nyaope?
   
   **Probe:** What are some of the reasons that make you continue using nyaope?

4. What makes it difficult to stop using nyaope?
   
   **Probe:** Why is it difficult to stop using nyaope?
   
   **Probe:** Why do people continue to use nyaope?

5. Have you tried stopping to use nyaope? If yes, tell me about it.
   
   **Probe:** Tell me about your attempts to stop using nyaope.
   
   **Probe:** What will make you stop using nyaope?

6. What made you decide to try to stop using nyaope?
   
   **Probe:** Why did you come to the rehabilitation centre?

7. To what extent do you have control over your use of nyaope?

8. What factors work in your favour that will enable you to stop using nyaope?

9. Name 4 things that should be done to make you to stop using nyaope.

10. In your opinion, what should be done to help nyaope addicts to stop?
    
    **Probe:** Do people who use nyaope need help? What kind of help? What should be done to stop the sale and of nyaope?

11. What advice would you give to young people who have not yet used nyaope?
APPENDIX 7: CONSENT FORM (ENGLISH)

UNIVERSITY OF LIMPOPO (Medunsa Campus) ENGLISH CONSENT FORM

Statement concerning participation in a Research Project.

Name of Project

THE ROLE OF LOCUS OF CONTROL IN NYAOPE ADDICTION: A MIXED METHOD STUDY IN GAUTENG

I have heard the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I know that sound recordings will be taken of me. I am aware that this material may be used in scientific publications which will be electronically available throughout the world. I consent to this provided that my name is not revealed.

I understand that participation in this Project is completely voluntary and that I may withdraw from it at any time and without supplying reasons. This will have no influence on the regular treatment that holds for my condition neither will it influence the care that I receive from my regular doctor.

I know that this Project has been approved by the Medunsa Research Ethics Committee (MREC), University of Limpopo (Medunsa Campus). I am fully aware that the results of this Project will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this Project.

............................................................  ............................................................
Name of patient/volunteer  Signature of patient or guardian.

.................................................  .................................................  .................................................
Place.  Date.  Witness

Statement by the Researcher

I provided verbal information regarding this Project
I agree to answer any future questions concerning the Project as best as I am able.
I will adhere to the approved protocol.

.................................................  .................................................  .................................................
Name of Researcher  Signature  Date  Place
APPENDIX 8: CONSENT FORM (SETSWANA)

UNIVERSITY OF LIMPOPO (Medunsa Campus) SETSWANA CONSENT FORM

Seteitemente se se ka ga go tsaya karolo mo Porojeke ya Patlisiso*.

Leina la Porojeke

THE ROLE OF LOCUS OF CONTROL IN NYAOPLE ADDICTION: A MIXED METHOD STUDY IN GAUTENG

Ke utlwiile maitlhomo le maikemisetso a patlisiso e e tshishintsweng mme ke filwe tšhono ya go botsa dipotso le go fiwa nako e e lekaneng ya go akanya gape ka nthla e. Maitlhomo le maikemisetso a patlisiso e a thaloganye ga sentle. Ga ke a patelediwa ke ope ka tsela epe go tsaya karolo.

Ke thaloganya gore go tsaya karolo mo Porojeke ke boithaopo le gore nka ikhogela morago mo go yona ka nako nngwe le nngwe kwa ntle ga go neela mabaka. Se ga se kita se nna le seabe sepe mo kalafong ya me ya go le gale ya bolwetsi jo ke nang le jona e eile ga se kita se nna se le tlotheletso epe mo tlokomelong e ke e amogelang mo ngakeng ya me ya go le gale.

Ke a itse gore Porojeke*e e rebotswe ke Patlisiso le Molao wa Maitsholo tsa Khampase ya Medunsa (MREC), Yunibesithi ya Limpopo (Khampase ya Medunsa). Ke itse ka botlalo gore dipholo tsa Porojeke di tla dirisetswa mabaka a saentifiki e eile di ka nna tsa phasaladiwa. Ke dumelana le seno, fa fela go netefadiwa gore se e tla nna khupamarama.

Fano ke neela tumelelo ya go tsaya karolo mo Tekelelong / Patlisiso / Porojeke* e.

............................................................  ........................................................

Leina ka molwetse/moithaopi  
Tshaeno ya molwetse kgotsa motlamedi.

............................................................  ........................................................

Lefelo.  
Letlha.  
Paki

Seteitemente ka Mmatlisisi

Ketlametse tshedimosetso ka molomo le/kgotsa e e kwadi lweng malebana le Porojeke.
Ke dumela go araba dipotso dingwe le dingwe mo nakong e e tlang tse di amanang le Porojeke ka moo nka kgonang ka teng.
Ke tla tsegetsa porotokolo e e rebotswe.

............................................................  ........................................................

Leina la Mmatlisisi  
Tshaeno  
Letlha  
Lefelo

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APPENDIX 9: DEMOGRAPHIC DATA (ENGLISH)
LOCUS OF CONTROL AMONG NYAOPE USERS IN GAUTENG

Participant study number: ………………………..…[For official use]

General Instructions:

- Remember: Do not reveal your name on the questionnaire as this exercise is confidential, and please give one answer per question unless if multiple answers are required.
- Write clearly or indicate with ‘X’ against appropriate response as applicable.
- The researcher will interview and assist those unable to complete the form without assistance.

<table>
<thead>
<tr>
<th>No</th>
<th>QUESTION</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How old are you?</td>
<td>[____</td>
</tr>
<tr>
<td>2</td>
<td>What is your gender?</td>
<td>[ ]</td>
</tr>
<tr>
<td>i)</td>
<td>Female</td>
<td>[ ]</td>
</tr>
<tr>
<td>ii)</td>
<td>Male</td>
<td>[ ]</td>
</tr>
<tr>
<td>3</td>
<td>At what age did you start using substances? (first time)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>When you first started using nyaope, did you know what it was?</td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>5</td>
<td>How long have you been using nyaope?</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Have you ever been admitted to rehabilitation to stop using nyaope?</td>
<td>[Yes] [No]</td>
</tr>
<tr>
<td>7</td>
<td>If yes, how long were you able to remain clean after rehabilitation?</td>
<td></td>
</tr>
</tbody>
</table>

Thank you for your time
APPENDIX 10: MEDUNSA RESEARCH & ETHICS COMMITTEE CLEARANCE CERTIFICATE

UNIVERSITY OF LIMPOPO Medunsa Campus

MEDUNSA RESEARCH & ETHICS COMMITTEE
CLEARANCE CERTIFICATE

MEETING: 04/2014
PROJECT NUMBER: MREC/H/127/2014: PG
PROJECT:
Title: The role of locus of control in Nyaope addiction: A mixed method study in Gauteng
Researcher: Mrs L Fernandes
Supervisor: Prof K Mokwena
Department: Public Health
School: Health Care Sciences
Degree: DrPH

DECISION OF THE COMMITTEE:
MREC approved the project.

DATE: 06 May 2014

DR C BAKER
DEPUTY CHAIRPERSON MREC

The Medunsa Research Ethics Committee (MREC) for Health Research is registered with the US Department of Health and Human Services as an International Organisation (ORIG0004219), as an Institutional Review Board (IRB00009132), and functions under a Federal Wide Assurance (FWA00009419).
Expiry date: 11 October 2016

Note:
(i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
(ii) The budget for the research will be considered separately from the protocol. PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.
APPENDIX 11: ASKING FOR PERMISSION GAUTENG DEPARTMENT OF SOCIAL DEVELOPMENT

NPO Directorate
Department of Social Development
Private Bag X901
Pretoria
0001
Acting Director: Mr Themba Msimanga

Dear Sir,

Re: Permission to collect research data at SANCA Drug Rehabilitation Centres in Gauteng

This letter is to request the permission from your office to allow us to conduct a study at the above-mention institution.

The study is entitled “THE ROLE OF LOCUS OF CONTROL IN NYAOPE ADDICTION: A MIXED METHOD STUDY IN GAUTENG” and the main aim is to describe the socio-demographic characteristics of a nyaope user and to support the triangulation of data on the psychological variable locus by exploring (by means of a focus group discussion) and describing (completing a questionnaire) their locus of control.

As locus of control (LOC) is recognized as a predictive factor in the onset of substance use knowledge of how LOC affect the clients admitted to the rehabilitation centres could assist in the planning of prevention programs to reduce substance abuse and to change relapse among drug users into treatment success. Furthermore by distinguishing between the personality characteristics (external LOC and internal LOC) of the client in the rehabilitation centre, rehabilitation programs could be aligned to suit the personality leading to a better chance of success of recovery with fewer cases of re-admission. It therefore becomes critical to understand the role of the predictive factor LOC in substance abuse as drug abuse often develops into a chronic, relapsing condition that is resistant to treatment.

The study received approval from the Medunsa Research and Ethics Committee (MREC) (copy of ethics clearance certificate enclosed). Please note that no data will be collected until the study has been approved by your institution.

I look forward to hearing from you at your earliest convenience.

Yours truly,

……………………

Mrs Lucy Fernandes
Lecturer: University of Limpopo

Contact details

Date
MS L. Fernandes

Dear Mrs Lucy Fernades

RE: APPLICATION TO CONDUCT RESEARCH IN THE DEPARTMENT OF SOCIAL DEVELOPMENT

Thank you for your application to conduct research in the Gauteng Department of Social Development.

Your application on the research "The role of locus of control in nyaope addiction: A mixed method study in Gauteng" has been considered and approved for support by the Department as it was found beneficial to the Department’s vision and mission. The approval is subject to the Departmental terms and conditions as endorsed by you on the 23/06/2014.

May I take this opportunity to wish you well in the journey that you are about to embark upon.

We are looking forward to a value adding research and a fruitful co-operation.

With thanks,

Ms. A. Avertmann
Acting Head of Department of Social Development
Date: 31/10/2014
APPENDIX 13: PERMISSION LETTER SANCA

SANCA National Directorate
Ms Cathy Vos
PO Box 195
Boksburg
1460
Dear Madam,

Re: Permission to collect research data at SANCA Drug Rehabilitation Centres in Gauteng

This letter is to request the permission from your office to allow us to conduct a study at the above-mentioned institution. The study is entitled “THE ROLE OF LOCUS OF CONTROL IN NYAOPE ADDICTION: A MIXED METHOD STUDY IN GAUTENG” and the main aim is to describe the socio-demographic characteristics of a nyaope user and to support the triangulation of data on the psychological variable locus by exploring (by means of a focus group discussion) and describing (completing a questionnaire) their locus of control.

As locus of control (LOC) is recognized as a predictive factor in the onset of substance use knowledge of how LOC affects the clients admitted to the rehabilitation centres could assist in the planning of prevention programs to reduce substance use and to change relapse among drug users into treatment success. Furthermore by distinguishing between the personality characteristics (external LOC and internal LOC) of the client in the rehabilitation centre, rehabilitation programs could be aligned to suit the personality leading to a better chance of success of recovery with fewer cases of re-admission.

It therefore becomes critical to understand the role of the predictive factor LOC in substance abuse as drug abuse often develops into a chronic, relapsing condition that is resistant to treatment.

The study received approval from the Medunsa Research and Ethics Committee (MREC) (copy of ethics clearance certificate enclosed). Please note that no data will be collected until the study has been approved by your institution.

I look forward to hearing from you at your earliest convenience.

Yours truly,

Mrs Lucy Fernandes
Lecturer: University of Limpopo
Contact details
Date
APPENDIX 14: APPROVAL FROM SANCA

From: Louisa Le Roux (mails@sancanational@tekomsa.net)
Sent: 22 September 2014 08:41 AM
To: Fernandes, Lucy
Subject: RE: Permission to conduct research

Dear Sir,

We have discussed your proposal, and I will be sending it through to all our centres. I will cc you on the email, so that you will be able to pick up on the email addresses and contact them directly.

Please note that we will expect to be acknowledged and also receive a copy of the final research report as soon as it is complete.

Kind regards and good luck,

Louisa Le Roux
National Coordinator

SANCA National
Phone: (011) 892 3029
Fax: (011) 892 3139
sancanational@tekomsa.net
www.sancanational.org