The Art of Addiction:
A Phenomenological Study of the Lived Experiences of Cocaine Dependents

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Submitted in partial fulfilment of the requirements for the degree of
Magister Atrium in Clinical Psychology

in the

Faculty of Health Sciences at the
Nelson Mandela Metropolitan University

March 2009

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Acknowledgements

I would like to express my gratitude and appreciation to:

My supervisor for his abiding patience and ability to transform impossibilities into realities.

The participants for their willingness to share their experiences.

Delray De La Harpe for her guidance during the data analysis.

My parents for their unwavering faith and love throughout my journey.

Thank you.
Abstract

Addiction is a complex social phenomenon resulting from psychological and physiological dependence. The aim of the study was to create a clinical impression of the lived experiences of cocaine dependents. A transcendental phenomenological approach was used to elicit the essence of addiction as experienced by the participants. Theoretical sampling ensured relevant participants were selected through haphazard sampling procedures. Data was collected through the use of biographical questionnaires and individual, semi-structured interviews with three cocaine dependents. Data was processed according to the four phenomenological principles epoche, phenomenological reduction, imaginative variation and synthesis using Tesch’s eight steps. The essence of cocaine dependency is contained in the psychological experiences of the drug which define and perpetuate that addiction. The psychological addiction develops prior to physical dependence resulting in an entrenched addiction before treatment is sought by the cocaine dependents.

KEY WORDS: Cocaine, Addiction, Transcendental Phenomenological Approach, Biopsychosocial Model
Chapter One

Introduction

1.1. Chapter Overview

Chapter One discusses the rationale for the study transpiring from the social awareness of cocaine dependency. Through understanding the motivation to investigate this phenomenon, the aim of the study is clarified as a research objective. The chapter reviews the methodological approach used in the study and highlights the data collection and analysis procedures as well as important ethical considerations in the study.

1.2. Rationale

Addiction is a dynamic social phenomenon resulting from psychological and physiological dependence. A review of literature reveals that there is a substantial amount of information regarding illicit drugs and numerous explanations for addiction. However, statistics render a disturbing reality of the prevalence of substance abuse in South Africa, suggesting that current methods of prevention and treatment could be enhanced. Furthermore, a change has been observed within the trends of drug abuse. An important shift within these patterns of drug use has been the increasing rates of cocaine abuse and dependence that has been revealed through regional statistics. The data collected through annual reviews of the treatment sought by drug abusers indicates that cocaine has become the second most commonly abused illicit substance in South Africa. Figures reflecting treatment admissions for substance-related disorders highlight an increase in the number of individuals presenting with cocaine as their preferred drug of choice. These statistics indicate marked increases across regional offices in South Africa. The Eastern Cape has been identified as the province with the highest number of admissions for cocaine-related problems which consisted of
approximately a third of all treatment admissions (Pluddeman, Parry & Bhana, 2007). These statistics suggest that individuals are becoming more vulnerable to developing a cocaine dependency.

Cocaine dependency encompasses a cluster of behaviours through which negative changes in the individual’s personality occur. The development of this dependence can be understood in terms of the pharmacological properties of the drug as well as the clinical effects that it produces. However, the term dependency refers to the behavioural characteristics that are observed in the dependents and does not include psychological aspects of the addiction (American Psychiatric Association, 2000). Furthermore, the lack of a comprehensive theory of addiction limits the understanding of the phenomenon which necessitates the review of various models of addiction (Coombs & Howatt, 2005). These models can be clustered into biological, psychological and social frameworks which can be merged using the biopsychosocial model of addiction (Van Wormer & Davis, 2008).

A review of literature is used to develop insight into the contributing biological, psychological and social factors of cocaine dependency, through which the mutual and reciprocal relationship between factors are highlighted (Kumpfer, Trunnell & Whiteside, 1990). Similarly, previous research and existing knowledge can be used to conceptualise the biopsychosocial deterioration that occurs in cocaine dependency. This knowledge has been used to develop the prevention and treatment programmes that are available to cocaine dependents. However, these programmes are not necessarily personalized to the individual needs of cocaine dependents and thus may lack in effectiveness. Thus exploration of the perceptions and beliefs of cocaine addiction as experienced by the dependents can be used to elicit the needs of these individuals when seeking treatment as well as enhance the efficacy of preventative strategies. This can be achieved through developing insight into the dynamics and processes that precipitate and perpetuate a cocaine addiction.
1.3. Objective

The aim of the study is to create a clinical impression of cocaine addiction through the description of the subjective meaning the participants attribute to cocaine and to seek common factors or patterns that emerge between the participants' lived experience of cocaine dependence.

1.4. Research Methodology

The present study will use a phenomenological research design that is descriptive yet analytical in nature (Miller & Salkind, 2002). The design will focus on the words, sentences and impressions provided by the participants (Neuman, 2003). The research design will be used to elicit the quality and texture of the participants’ experiences while simultaneously clarifying the meaning attached to the phenomenon through its inductive nature (Willig, 2003). As a phenomenological approach does not include a series of techniques, the understanding of phenomenological processes will be incorporated into the study and provide guidance in terms of research design. The understanding will also be used to ensure the integrity of phenomenon being investigated (Groenewald, 2004). The inclination towards description and interpretation occurs through the emphasis of subjectivity within a phenomenological study. As a result the focus of the study is directed towards the feelings, attitudes and beliefs of the participants (Denscombe, 2003). Phenomenology does not reduce the phenomenon into identifiable variables that are understood in a controlled environment but rather seeks to accurately capture the phenomenon within the context that it occurs (Smith, 2003).

Through the phenomenological approach and application of the four phenomenological processes, the study aims to elicit and describe the lived experience of cocaine addiction. The four phenomenological processes include epoche, phenomenological reduction, imaginative
variation and synthesis of meanings (Moustakas, 1994). These processes will be applied to the study using four steps. Firstly the researcher will read the entire transcript of each interview to grasp the sense of each participant’s experience. Secondly, ‘meaning units’ will be identified by bracketing all information that pertains to the phenomenon. The meaning units will be reviewed to elicit the psychological insight within them. Finally, the meanings will be synthesised to provide a thick description of the lived experience of cocaine dependents (Smith, 2003). A discussion of how these processes were applied to the present study is provided in the chapter of methodology.

1.4.1 Data collection

The collection of data will be initiated using a biographical questionnaire to identify participants relevant to the study in terms of behavioural criteria characteristic of cocaine dependency. The data collection process continues with individual, semi-structured interviews. These interviews will be guided by an interview schedule but will remain flexible to allow for an interactive process that will be used to describe the lived experience of cocaine dependents.

The interviews were recorded using a recording machine to ensure that data obtained through the interviews is accurately captured. Once the interviews had been conducted, the data was transcribed verbatim by the researcher into text that could be used during the data analysis process. Once a preliminary data analysis had been completed participants were contacted telephonically to verify the information obtained from the interviews.

1.4.2 Data analysis

The four phenomenological processes of epoche, phenomenological reduction, imaginative variation and synthesis of meanings will be actualised through the application of
Tesch’s (1990) eight steps in qualitative data analysis. In using these steps, the transcriptions are reviewed until meaning is extracted and clustered into similar topics. The topics are organised according to their importance and given abbreviated codes. The codes are then applied to the transcriptions to determine if new topics emerge. Once all possible topics have been identified, the topics are categorised and new abbreviations are developed. The data contained within each transcription is then assembled into the descriptive categories.

To ensure credibility of the data analysis and research results, an independent research psychologist will simultaneously analyse the transcriptions using Tesch’s (1990) eight steps. Once the analyses have been completed, the researcher and independent research psychologist will consult on their findings to ensure the integrity of the results obtained from the data analysis.

1.4.3. Ethical considerations

Research ethics provide the researcher with guidelines to establish a balance between values, the pursuit of knowledge and the rights of those involved in the research. The researcher maintained integrity throughout the research process and took the necessary steps to prevent scientific misconduct. To actualise the ethical considerations the researcher ensured the following: informed consent through which deception is avoided, accurate data collection, maintaining confidentiality, anonymity and privacy of participants, accurate dissemination of results and maintaining competence within the researcher’s professional role.

Informed consent was obtained by all participants through a written contractual agreement. Included in this contract was information regarding the aim of the study, the researcher, research procedures, potential risks, confidentiality, dissemination of results, and confirmation of voluntary participation as well as the right to withdraw from the study.
Participants were encouraged to ask questions and request clarification prior to providing consent to ensure that all possible deception was avoided. The confidentiality of information obtained from participants as well as the use of pseudonyms ensured the anonymity and privacy of the individuals. Furthermore, documentation collected during the process was securely stored by the researcher.

Although no potential psychological risks were identified, the researcher adhered to the principle of non-maleficence while conducting the interviews by ensuring that the discussion did not lead to psychological distress and thus become harmful to the participants. The researcher remained dedicated to the accurate investigation of the phenomenon and took necessary steps to ensure that all information obtained and disclosed through the study was not falsified during the procedure. A verification process with the participants also ensured the accuracy of the study’s findings prior to the dissemination of the results.

1.5. Conclusion

Chapter One provided an overview of the focus of the study as well as the methodology used to actualise the researcher’s goals. Chapter Two follows with a contextualisation of cocaine dependency with South Africa, highlighting the clinical effects of the substance as well as theoretical frameworks in understanding the phenomenon. Chapter Three provides a comprehensive discussion of the biopsychosocial model of cocaine dependence. Within this chapter the contributing biological, psychological and social factors of cocaine addiction are considered as well as a discussion regarding the development of dependence and the consequences of this substance-related disorder.

Chapter Four reviews the methodology implemented within the study. This review highlights the benefits of qualitative research designs as well as the appropriateness of a phenomenological approach in investigating the lived experience of cocaine dependents. The
chapter discusses sampling procedures as well as data collection and analysis. In addition, observations made during the research process and ethical considerations pertinent to the study are examined.

Chapter Five provides the results and discussion of the study’s findings. Within this chapter the lived experience of the dependents are described to create a clinical impression of cocaine addiction in which common factors among the dependents are highlighted. Chapter Six provides a summary of the study and highlights important outcomes pertaining to the results of the research as well as the methodology used to extract such findings. The chapter concludes with implications of the present study.
Chapter Two
Cocaine Dependency in Context

2.1. Chapter Overview

Chapter Two is a review of literature regarding the context of cocaine dependency and will be used to contextualise this social phenomenon. As an exploration into this rapidly occurring problem, the chapter will provide a current description of drug abuse within South Africa as well as factors that have contributed to the development of the illicit drug trade. The major implications of the country’s illicit drug trade will be discussed to highlight the negative and pervasive nature of drugs within South Africa. A review of current statistics will be used to highlight the prevalence of substance-related problems, particularly cocaine-related problems, as well as emphasise the need for further research within this field.

The chapter provides a brief history of cocaine and its integration into society. This review of the literature provides an account of where cocaine originated and social forces that have incorporated it into society. By understanding how cocaine was initially perceived and how these perceptions have changed over time provides insight into the establishment of cocaine as an increasingly popular illicit drug. In addition to the social history of cocaine, the chapter will outline the clinical effects of the substance. As this literature regarding cocaine primarily focuses on the neurobiological reactions, knowledge of the pharmacological properties of cocaine can be used to understand how the properties of the substance contribute to cocaine-related disorders.

A detailed description of dependence provides a framework to contextualise this social problem as well as highlight the characteristics that will be used to identify research participants. In addition to this, the chapter will aim to address semantic issues regarding
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substance-related disorders. This will be supplemented with a review of specific models of addiction that highlight various factors involved in substance dependence.

2.2. Drug Abuse in Context

Global figures indicate that approximately 185 million people use illicit drugs. This figure constitutes approximately 3% of the world’s population (Levinthal, 2008). South Africa has become a major conduit in the international drug trade. Economic and social transformations during the 1990s have resulted in South Africa becoming an appealing and convenient country for many drug syndicates (United Nations Office on Drugs and Crime [UNODC], 2002). Its geographical location, extensive trading relations with African and international countries as well as decreased emphasis on border control has resulted in an increase of drug trafficking in South Africa. The infrastructure within South Africa has also facilitated the development of drug trafficking networks. The established transport facilities and developed communication systems have been fundamental in the growth of the illicit drug trade. The country’s production of other valuable commodities, such as gold or diamonds, as well as a relatively stable currency has also contributed to the escalation of the drug trade. Furthermore, South Africa’s weak criminal justice system and strained law enforcement agencies are unable to deter and prevent such high levels of illegal activities (Leggett, 1999). The above-mentioned transformations and infrastructure have resulted in South Africa becoming the largest market for illicit drugs in southern Africa (UNODC, 2002).

The illicit drug trade has created a number of developmental challenges for the South African government. The implications of this trade are visible in the trends of drug manufacture, substance abuse and other drug-related social problems within the South African community (Mashele, 2005). Social implications of drug use include health
complications and the spread of disease; socio-economic instability and poverty; disruption of traditional social groups and the development of unfavourable social networks; as well as crime (Da Rocha Silva, 2008; Gaum, Hoffman & Venter, 2006; Saffy, 2003; UNODC, 2002; Van Loggerenberg, 2007).

Extensive research into the relationship between substance abuse and the incidence of HIV/AIDS has indicated that the dynamic interplay between these social problems are perpetuating and devastating. Drug abuse has facilitated the spread of HIV/AIDS through increased risk-taking behaviour such as the sharing of needles or unsafe sexual practices (Bloor & Wood, 2002; Raj, Saitz, Cheng, Winter & Samet, 2007). Similarly, HIV/AIDS has been identified as a prominent causal factor for the use of illicit drugs. This relationship between drug and disease is prevalent in the country’s sex trade, which both prompts the problems and continues to aggravate the epidemic. The implications of this detrimental dynamic on the South African government can be seen in the annual financial costs of HIV/AIDS (UNODC, 2002).

Drug trafficking has significant implications for the country’s economic development. The intricate relationship between drugs and organised crime, such as money laundering, can produce economic vulnerability within a country. In addition to this, the behaviour of drug users, especially their need for instant cash, often motivates poor financial decisions that result in lower-level economic instability (Gaum, Hoffman & Venter, 2006; UNODC, 2002). Other financial implications are evident in expenses incurred by public health care facilities in the treatment of adverse consequences of drug use; the decreased productivity and high mortality rates of actively employed individuals; accumulated fees of legal services and processes; as well as treatment and rehabilitation of drug users (Powers, 2007).

The transformations that have occurred in South Africa have produced changes within traditional social groups, such as families and previously influential social organisations. The
changes in these social structures have resulted in individuals becoming more susceptible to drug use and increased their involvement in the illicit drug trade (UNODC, 2002). Similarly, the use of drugs can result in social alienation from these traditional social structures which serves to perpetuate the individual’s use of drugs (Gossop, 2007).

The illicit drug trade in South Africa is closely linked to various criminal activities committed by individuals and groups. Research has indicated that there is a strong correlation between drug use and domestic violence or abuse, with approximately half of perpetrators committing such acts while under the influence of a substance (Padayachee & Singh, 2003). Robbery and theft are strongly associated with drugs, and have become an important activity of organised crime units in the illicit drug trade (UNODC, 2002). Statistics indicated a 4% national increase in drug-related crimes between 2006 and 2007. This increase is further indication that drug abuse remains a prevalent social concern in South Africa (South African Police Services: Department of Safety and Security [SAPS], 2007).

The escalation of drug-related problems is clearly illustrated through the number of individuals receiving treatment for substance abuse problems. This is evident in the rates of first-time admissions to treatment centres for substance abuse problems - which currently make up approximately three quarters of all admissions. This suggests that the prevalence of drug abuse is increasing and highlights the increased need for treatment services (Pluddemann, Parry, Cerff et al., 2007).

Information regarding the extent of substance abuse in South Africa is often limited to statistical reports regarding drug-related crimes. Thus, the actual degree to which these illicit substances permeate the community is relatively inaccurate (SAPS, 2007). Historical and current trends of drug use identify alcohol as the most commonly abused substance, and attribute its legally permitted and socially accepted status as the main reason for this. Trends in illicit drug use indicate that cannabis was historically the most commonly abused drug and
that its prevalence in society has remained relatively stable to date. In 2002, UNODC reported that Mandrax was the second most prevalent drug abused by South Africans. However, the use of Mandrax has declined since 2002 making it the fifth most commonly abused drug in 2007 (Pluddemann et al., 2007a).

The escalating use of cocaine in South Africa has resulted in it becoming the third most common substance abused in the country, succeeding alcohol and cannabis (Pluddemann et al., 2007). Cocaine abuse in South Africa has been escalating since the 1990s. In 1998, the United Nations, Africa Recovery estimated that there were approximately 500,000 cocaine users in South Africa (Leggett, 1999). In 2007, South African Community Epidemiology Network of Drug Use [SACENDU] reported a significant increase of cocaine related treatment admissions, indicating that cocaine had become the second most commonly abused illicit drug in South Africa (Pluddemann et al., 2007b).

In 2007, regional statistics showed that 10% of admissions in the Western Cape and central region (consisting of the Free State; Northern Cape and Northwest provinces) reported cocaine as the primary drug of abuse. There was also an increase in cocaine-related treatment in Mpumalanga and Limpopo within 2007. Rising from 6% to 15%, as well as a 4% increase in KwaZulu Natal with 20% of admissions identifying cocaine as the primary drug of abuse (Pluddemann, Parry & Bhana, 2008). Gauteng has experienced a dramatic increase in the number of individuals seeking treatment for their cocaine abuse. Figures indicated that in first half of 2007, 11% of admissions to treatment centres in Gauteng were for cocaine-related problems (Pluddemann et al., 2007a). During the second six months of 2007, this percentage more than doubled to 25% of all admissions in the Gauteng region being cocaine-related (Pluddemann et al., 2008).

The incidence of cocaine-related treatment in the Eastern Cape, as reflected in treatment admissions, has indicated a significant growth. In 2004, it was estimated that 3% of all
admissions were for cocaine-related problems. In 2007, 19% of treatment admissions in reported cocaine as the primary drug of abuse. This figure indicated that the Eastern Cape has the highest frequency of cocaine use within South Africa (Pluddemann et al., 2007a). This figure significantly increased in the second half of 2007, with 34% of all treatment admissions in the Eastern Cape reporting cocaine as the primary drug of use. The Eastern Cape remains the region with the highest admissions for cocaine-related problems within South Africa (Pluddemann et al., 2008).

The illicit drug trade, its social invasion and implications as well as the drug-related statistics highlight the extent and nature of drug abuse within South Africa. In addition to this, the prevalence of cocaine as well as its alarming escalation within society highlights the need for exploration into this social phenomenon. The following section is a chronological account of cocaine use to provide further insight into the mechanisms that have facilitated the increase in cocaine-related problems.

2.3. History of Cocaine

Cocaine is an alkaloid substance that is extracted from the leaves of the coca plant. Although there are a variety of coca shrubs with a number of psychoactive substances, cocaine is extracted from the Erythroxylon coca plant. The life expectancy of this coca plant is fifty years with each plant capable of being harvested up to four times a year. The average concentration of cocaine in each leaf of the Erythroxylon coca plant is approximately 0.7% (Karch, 2007). The extraction and isolation of cocaine from coca leaves is relatively simple, with common methodology requiring inexpensive equipment and little technical knowledge. The process begins with various solvents that are mixed with the coca leaves to extract the cocaine. This extraction process produces a coca paste which is then purified to produce the cocaine base. The base is then treated with oxidising agents and acidic solutions to produce
cocaine hydrochloride. Cocaine hydrochloride is a white powder that is nearly pure cocaine that can be snorted or injected by the user (Karch, 2007; Levinthal, 2008).

As one of the oldest drugs known in society, cocaine was first cultivated in South America by Inca communities during the 13th century who chewed the leaves of the coca plant. The Incas believed that the plant was a gift from one of their gods that allowed them to endure the harsh climate and challenges of their environment with little suffering. Following the Spanish conquest in the 1500s, the coca leaves were brought to Europe. However, the extensive journey resulted in a decrease in the potency of the coca plants. As a result of the poor effects produced by the imported coca, the leaves were dismissed until the 1850s when the active chemical was isolated by a German chemist. Following the discovery of the anaesthetic properties of the coca leaf, interest in cocaine was restored and by the 1860s, cocaine was patented by the medical fraternities in Europe and America (Levinthal, 2008; Willis, 1997).

During the 19th century, cocaine was only available in its plant form or within a solution. It was first used commercially for a variety of medicinal purposes such as a local anaesthetic during surgical procedures, nasal sprays or to relieve headaches and fatigue. Cocaine was also endorsed by prominent social figures in the late 1800s including Karl Koller who published papers describing the anaesthetic qualities of cocaine (Karch, 2007). Sigmund Freud, a neurologist and the founder of psychoanalysis, also published papers on the beneficial psychological properties of cocaine and readily distributed the substance to those around him (Levinthal, 2008). As its popularity grew, cocaine was later used as an ingredient in consumables such as beverages, the most commonly known being ‘Coca-Cola’, as well as within wine and chewing gum. With advancements in chemical knowledge and technology, major chemical manufacturers began to produce large quantities of refined
cocaine which resulted in a significant increase in the trade and use of the drug (Gossop, 2007; Karch, 2007).

The popularity and extensive use of cocaine was further facilitated by lenient attitudes of governments who imposed little control or regulation of the drug. At the beginning of the 21st century, various social organisations began highlighting the negative consequences of frequent cocaine use and began exerting pressure on governing bodies to restrict the use of cocaine. This change in perspective regarding the use of cocaine was mainly initiated by the medical professionals who were increasingly confronted by the incidences of high toxicity and becoming aware of the detrimental effects of sustained cocaine use (Karch, 2007). In response to these social pressures, governing bodies imposed various regulations that forced manufacturers to indicate the quantity of dependence-forming drugs in products. Such indications were aimed as warnings to consumers who were responsible for their substance use. Despite a number of these regulations that were developed during this time, no restrictions or prohibitions were imposed on the sale and use of cocaine (Levinthal, 2008).

In 1914, the Harrison Act was established to regulate the abuse of opiates and cocaine through taxation on the sale and purchase of the drugs. When the act was unable to regulate and reduce the incidence of abuse, the drugs were eventually prohibited. It was at this point that the manufacture, sale and use of cocaine became illegal and any such activities were forced underground (Levinthal, 2008). The prohibition and classification of cocaine as an illicit drug deterred the overt production and trade of the substance until the 1980s when its popularity re-emerged among drug users (National Institute on Drug Abuse [NIDA], 2004). Its highly addictive characteristics coupled with the euphoric experiences it produce, resulted in it becoming a widely abused substance towards the end of the 20th century (Narconon Johannesburg, 2005). These features can be further understood by reviewing the pharmacology of cocaine as well as the clinical effects that the substance produces.
2.4. Clinical Effects of Cocaine Use

Cocaine’s popularity stems from the immediate euphoric effects that it produces. As a central nervous system stimulant individuals experience both physical responses and psychological effects when using cocaine. These responses vary depending on the toxicity and frequency of use. Short-term physical responses to low doses include increased alertness; increased body temperature; decreased appetite; motor hyperactivity or restlessness; reduced fatigue and tachycardia (Julien, 1998). Psychological effects of low toxicity include immediate euphoria characterised by enhanced emotions; mental clarity; increased self-confidence and reduced inhibition; improved interpersonal communication; sexual arousal; as well as a general sense of well-being (Coombs & Howatt, 2005; Gawin, 1991; Julien, 1998; Levinthal, 2008).

During intoxication, it is common for cocaine users to experience a flight of ideas resulting in talkativeness that is characterised by pressured and often tangential speech. The initial effects of cocaine last for less than an hour and are usually followed by a period of euphoria mixed with anxiety. As the level of cocaine continues to decrease, individuals continue to experience significant negative changes in their mood, including marked irritability, anxiety, and depression. Due to the short-lived effects of cocaine, repeated use over a short period of time is common as users crave the drug to regain previously experienced euphoria (Barlow & Durand, 2002; Julien, 1998; Levinthal, 2008).

Frequent use of high-doses of cocaine is extremely harmful and can result in numerous toxic physical and psychological symptoms. Acute toxicity occurs according to dose of cocaine and body mass, and is approximately two milligrams per kilogram (Julien, 1998). The Diagnostic and Statistical Manual of Mental Disorders [DSM IV –TR], defines cocaine intoxication as maladaptive changes in behavioural and psychological functioning, such as mood, sociability, interpersonal sensitivity; and judgement. During intoxication, the
individual may develop physical symptoms including tachycardia; dilation of pupils; changes in blood pressure; perspiration or chills; nausea; changes in psychomotor behaviour; confusion; seizures; and possible perceptual disturbances (American Psychiatric Association, 2000).

As the most powerful, dependence-inducing stimulant that occurs naturally, cocaine directly affects the brain. Numerous studies have been conducted to understand how cocaine produces its pleasurable experiences and what makes the drug highly addictive (NIDA, 2004). A review of the pharmacology of cocaine indicates that the substance produces three features that result in the physiological and psychological effects. The first feature is its ability to act as a local anaesthetic; secondly it is a vasoconstrictor and thirdly; it has strong psychoactive properties that act as strong reinforcers (Julien, 1998). Research suggests that the anaesthetic and vasoconstricting properties of cocaine are more prominent in chronic cocaine users and are strongly related to physiological complications that are experienced. However, the compulsive use and eventual abuse of the substance is mainly the result of the strong psychostimulant properties of cocaine (Julien, 1998).

Cocaine produces neurobiological reactions by influencing the function of synaptic terminals within the brain. Cocaine affects the transmission of three main neurotransmitters within the brain, namely; dopamine; norepinephrine; and serotonin. Initially the cocaine will stimulate the release of these neurochemicals thus increasing the volume of these neurotransmitters released into the synapse. It then reduces the presynaptic terminals’ ability to reabsorb these neurochemicals, resulting in an accumulation of neurotransmitters in the synapse. Cocaine’s affect on the dopaminergic neurons is the most influential, as it is the most important neurobiological process affected by the psychostimulant properties and reinforcing characteristics of the substance (Julien, 1998; Kalivas, 2007). Dopamine neurotransmission forms part of the brain’s reward or pleasure system and plays a key role in
the development of reward seeking behaviour. Cocaine acts as an anaesthetic agent competing with the dopamine reuptake processes that occur in the brain, resulting in a continued sense of euphoria (Barlow & Durand, 2002; Sadock & Sadock, 2003).

Cocaine’s interference with neurochemicals and synaptic terminals is also important with regards to withdrawal and tolerance. Cocaine’s affect on the presynaptic terminals often remains after cessation of the drug. In response to the altered neurochemical levels in the synapse, there is a marked increase and later a decrease in dopamine transporters. This disruption to the brain’s reward and reinforcement functioning is the cause of anhedonia and craving that is experienced during withdrawal. The increased volume of dopamine also affects the postsynaptic terminals. The blocked reuptake process of the presynaptic terminals and an increased quantity of dopamine result in a decreased number of postsynaptic terminals available to absorb the dopamine. The inability of the postsynaptic terminals to absorb the excess dopamine results in tolerance. Similarly, cocaine binds to the serotonin and norepinephrine presynaptic terminals and blocks the reuptake processes of these neurotransmitters (Julien, 1998).

Knowledge regarding the pharmacology and clinical effects of cocaine provides a framework to understand the mechanisms involved in the development of such substance-related disorders. However, it does not provide a description of how this disorder is manifested with problematic cocaine use. The manifestation of cocaine addiction can be illustrated by reviewing the behavioural characteristics of cocaine dependence.

2.5. Substance Dependence

The term substance dependence is widely used and refers to a cluster of behaviours including progression, preoccupation, denial, a sense of loss of control and continued use despite the awareness of adverse long-term consequences (Coombs, 2004; Van Wormer &
Davis, 2008). The terminology of substance related disorders is often used interchangeably and distinguishing between the terms can facilitate accurate communication (Kranzler & Li, 2008). In addition to this, patterns of normal drug use must also be considered. These patterns include the use of drugs that are socially sanctioned and not perceived as unusual or deviant as well as drug use that does not result in pathological behaviour (Hammersley, 2005).

A valuable classification system reviews five different levels of drug use, including (1) abstinence, (2) social use, (3) drug abuse, (4) addiction with physical dependence, and (5) addiction with physical and psychological dependence. Abstainers refer to individuals who do not use substances. Social users include individuals who only use the substance intermittently at social gatherings. The substance use at this level does not form the purpose of the social gathering and does not interfere with the individual’s level of social, familial or occupational functioning. Drug abusers are individuals who use higher doses of the substance in social situations where the purpose of meeting is to achieve intoxication. The motivating factors for increased use of the substance vary among users and may include mood modification, coping and enhancing self-esteem. The fourth level of use refers to individuals that are physically dependent but not psychologically dependent on the substance. This form of addiction is characterised by the development of tolerance and the experience of withdrawal symptoms. The final stage of substance use involves addiction with physical and psychological dependence. These users experience physical symptoms of tolerance and withdrawal and are dependent on the substance to cope in their daily lives (Coombs & Howatt, 2005).

The DSM IV – TR does not include addiction as a substance-related disorder, but provides three distinct categories relating to substance use. These include: no substance use disorder, substance abuse and substance dependence. The DSM IV – TR distinguishes substance abuse from substance dependence based on identifiable behavioural criteria.
Substance abuse refers to a pattern of substance use that results in failure to fulfil responsibilities; the use of the substance in hazardous situations; or legal, social and interpersonal problems as a result of use. Substance abuse is distinguished from substance dependence through the exclusion of tolerance, withdrawal or compulsive use of the substance, and is only diagnosed when the full criteria for substance dependence is not met (American Psychiatric Association, 2000).

The DSM IV – TR does not include psychological dependence, which is the craving of a substance to avoid a dysphoric state, within these definitions. The behavioural and psychological aspects of substance-related disorders are viewed as the result of physiological changes in the behavioural centres of the brain. Thus the disorders can be identified and understood within behavioural criteria. As addiction refers to both psychological and physiological dependence, exploring the lived experience of cocaine dependents in the present study will provide insight into the chronic, relapsing and compulsive nature of cocaine use and thus capture the subjective experience of cocaine addiction (Kranzler & Li, 2008; Levinthal, 2008).

Cocaine Dependence as defined within the DSM IV – TR highlights specific behavioural, physical and cognitive symptoms that are the result of continued cocaine use despite negative consequences of such use. Central to the disorder is the individual’s shift in priorities and behaviours from previously valued ones to those that enable cocaine use. The drug-using behaviour is viewed as maladaptive as the person’s ability to voluntarily engage in such behaviours becomes controlled by the drug (American Psychiatric Association, 2000; Sadock & Sadock, 2003).

The DSM IV – TR definition of Dependence refers to the impairment or distress resulting from the pattern of substance use. It is identified by the presence of three or more behavioural criteria that are evident during a twelve month period, that include:
(1) tolerance, as defined by either of the following:

(a) a need for markedly increased amounts of the substance to achieve intoxication or the desired effect

(b) markedly diminished effect with continued use of the same amount of the substance

(2) withdrawal, as manifested by either of the following:

(a) the characteristic withdrawal syndrome for the substance

(b) the same (or closely related) substance is taken to relieve or avoid withdrawal symptoms

(3) the substance is often taken in larger amounts or over a longer period than was intended

(4) there is a persistent desire or unsuccessful efforts to cut down or control substance use

(5) a great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects

(6) important social, occupational, or recreational activities are given up or reduced because of substance use

(7) the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance. (American Psychiatric Association, 2000)

Cocaine dependence is often characterised by inexplicable changes in an individual’s personality. Such changes include marked irritability; decreased concentration; compulsive behaviour; and disruptions to normal sleeping patterns (Sadock & Sadock, 2003). The use of cocaine includes a modified pattern of substance use that impairs an individual’s functioning that causes notable distress and is manifested in behavioural, physical or cognitive changes. The two most common features of substance dependence - tolerance and withdrawal - are observable in individuals with physiological dependence. Symptoms of tolerance that are exhibited by cocaine dependents can include the need for significantly larger quantities of...
cocaine to achieve intoxication or a diminished effect produced by the same quantity of cocaine. Following cessation of use, a dependent individual may experience withdrawal from cocaine. This withdrawal is characterised by a dysphoric mood that is accompanied by fatigue; unpleasant dreams; sleep disturbances; increased appetite; and changes in psychomotor behaviour (American Psychiatric Association, 2000).

In addition to these two main features, non-physiological dependence is observed in the increased and extended use of the substance that is greater than what was intended by the individual. There is continued use despite an awareness of the physiological and psychological problems caused by cocaine. As a result of this increased use, the individual may engage more in drug-related activities such as acquiring, using or recovering from the cocaine. During this time, the person is likely to experience strong desires to control or reduce the use of cocaine and make many unsuccessful attempts to do so. The preoccupation with drug-related activities often results in the individual spending significantly less time in occupational, social, or recreational activities (American Psychiatric Association, 2000).

The development of cocaine dependence can be conceptualised in terms of the pharmacological properties of the substance as well as the clinical effects that it produces. However, an exploration into this social phenomenon requires further understanding of other factors that encourage and maintain the maladaptive pattern of cocaine use. This understanding can be achieved through the review of addiction models or theories. Addiction models refer to theoretical frameworks that prioritise the factors contributing to the substance-related disorders and thus provide a perspective of the problem as well as an indication of how to resolve the problem (Alcohol and Drug Services, 1996).
2.6. Models of Addiction

The term ‘addiction’ originated from the Latin word *addicere*, which means ‘to adore, devote or yield oneself’ (Online Etymology Dictionary, 2001). Used frequently in all spheres of society, addiction refers to the psychological and physiological dependence on a substance (Sarafino, 1990). Mutual understanding regarding the term addiction is complicated by the lack of one accepted and comprehensive theory of addiction. Therefore, developing an understanding of addiction is achieved through the review of addiction models (Coombs & Howatt, 2005).

2.6.1. Biological Models of Addiction

The biological models of addiction focus on physiological factors that cause substance-related problems. The medical model, which is also known as the disease model, defines an addiction as a disease that is harmful and possibly fatal due to an individual’s loss of control over the use of a particular substance. The medical model acknowledges that the addiction may remit, but concludes that there is no cure for the disease and that optimal treatment requires complete abstinence (Coombs & Howatt, 2005).

The genetic model proposes that individuals who develop an addiction have a genetic predisposition towards substance abuse (Coombs & Howatt, 2005). The model focuses on the cause of addiction and proposes that addictive behaviours are encoded in an individual’s genes. The genetic composition thus makes the individual vulnerable to addiction if the individual is exposed to the correct circumstances (Gregoire & Jungers, 2007). The biomedical model integrates biological and behavioural factors in understanding an addiction. This model holds that the repeated use of drugs alters the brain’s structure and functioning. These changes result in the individual engaging in behaviour, identified by the brain, to avoid any unpleasantness caused by withdrawal (Coombs & Howatt, 2005). This is further
explained through the reward-deficiency and neurophysiological adaptation model which is an integration of the biomedical and genetic model. This model suggests that an addict has a neurological predisposition to developing a substance-related disorder. Chemical imbalances in the brain affect the individual’s reward system that provides reinforcement for certain behaviours, thus making specific individuals more vulnerable to developing dependence problems (Coombs & Howatt, 2005).

2.6.2. Psychological Models of Addiction

The psychological models of addiction attribute the development of a substance-related disorder to the individual characteristics of the substance user. The psychodynamic perspective conceptualises addiction as a cluster of unconscious needs that stem from socially unacceptable desires or previous traumatic experiences for which the individual wishes to avoid assuming responsibility. The individual’s inability to address or manage painful feelings motivates the use of substances as a form of self-medication. The drugs provide the individual with relief from psychological pain and are used to cope with life problems. Addiction occurs when individuals repeatedly and consistently self-medicate with drugs (Coombs & Howatt, 2005; Wanigaratne, 2006).

The psychological resource model focuses on the individual’s personality and is the foundation of the widely popularised term ‘addictive personality’. The habituation of drug-use is understood as behaviour that fulfils a specific function in relation to the individual’s personality. Thus individuals who have personality traits such as irritability, anxiety, impulsivity and aggression are more likely to use substances. The interaction between the substance and individual characteristics aggravate the original personality traits and thus propel further use of the substance, eventually resulting in an addiction (Teesson, Degenhardt & Hall, 2002).
The cognitive model focuses on the interaction between an individual’s different beliefs and schemas. The model highlights that addiction occurs when a critical event activates these beliefs or schemas and creates anticipatory belief related to the use of the drug. These expectations of the drug result in cravings which then activate permissive beliefs that prompt the addictive behaviour (Wanigaratne, 2006).

The moral model views addiction as a character defect resulting from the individual’s weaknesses and ignores any biological processes that contribute to the addiction. The addiction is conceptualised as the individual’s moral failure and poor decision-making that is likened to criminal behaviour (Coombs, 2004; Coombs & Howatt, 2005).

The spirituality model conceptualises the addict as an individual who has deterred from his spirituality. The individual’s abuse of substances is facilitated through the disconnection from a higher power that is viewed as a source of truth, love and wellness. This model is often integrated into popular treatment approaches, where the focus is placed on restoring the addict’s spiritual relationship (Coombs & Howatt, 2005).

Orford (1985) developed the excessive appetite model of addiction that conceptualises substance misuse as a collection of behaviours that are fuelled by an excessive appetite. The model emphasises the importance of how addictive behaviour occurs through personal inclinations. The addiction is perceived as a breakdown of restraint and subsequent development of attachment to drug-taking behaviour that is characterised by the individual’s internal conflict, decision making and sense of control (Wanigaratne, 2006). In addition to this, the degree of substance abuse is associated with the personal functions that the drug serves. These can include mood modification, tension reduction, self expression and enhancement of self-identity (Orford, 1985).
2.6.3. Social Models of Addiction

The social models of addiction emphasise the role of an individual’s environment in the development of a substance-related disorder. The life-process model views addiction as a habitual process that an individual engages in to achieve gratification and security. Central to this model is the role of an individual’s social context and experiences which influence the individual’s habitual use of a substance (Karr, 2007). A similar model is the social model which emphasises the role of disruptive social forces in the development of an addiction. These forces include social conditions such as unemployment and poverty which make individuals vulnerable to substance abuse. (Alcohol and Drug Services, 1996). The socio-cultural model attributes the development of an addiction to social and cultural influences that prevent or promote certain behaviours (Greene, 2008). This model focuses on social mechanisms that facilitate the development of an addiction. These mechanisms include: ethnic beliefs, familial traditions, social norms, behaviour modelling, and socio-economic status (National Library of Medicine, 2007).

Bandura’s (1977, in Coombs & Howatt, 2005) social learning theory highlights a four stage process through which behaviour is acquired. Initially the individual observes the behaviour of family or peers and later recalls the behaviour that has been modelled. The individual then imitates such behaviour and through internal forces becomes motivated to continue the behaviour that has been learnt. The social learning theory emphasises the role of reinforcement on an individual’s anticipation, planning, expectancies, attributions, self-efficacy as well as decision making that promotes the use of drugs (Wanigaratne, 2006).

Several models of addiction have been briefly explored, each focusing on a different facet of the addiction. However, in order to capture the essence of addiction, a comprehensive and integrated model is required. Thus the concept of addiction is more congruent with a biopsychosocial model (Van Wormer & Davis, 2008).
2.7. The Biopsychosocial Model of Addiction

The biopsychosocial model views addiction as an intricate and complex interaction between an individual’s biological status, psychological state and social dynamics (Coombs & Howatt, 2005). Biological factors incorporated into this model include genetic predispositions, physical characteristics of the individual and physiological reactions to the substances. Psychological facets identified by the model include an individual’s cognitions, emotions, and motivation which are reflected in the individual’s behaviour. Social factors refer to the external systems with which the individual interacts. These systems include family, friends, groups, communities and societal structures (Sarafino, 1990). These three components include the subjective experience of craving, changes in psychological and physiological states as well as the individual’s perception of risk involved when using the drug (Teesson et al., 2002).

The biopsychosocial framework emphasises that the relationship between factors is reciprocal and multi-directional. Thus any change that occurs in one facet can resonate throughout the system and subsequently be influenced by changes occurring in other areas. The model views the individual’s behaviour as intentional and purposive, and acknowledges that such behaviour may be self-destructive. The model also emphasises the importance of distinct events and the meaning of such events to the individual (Kumpfer et al., 1990).

The biopsychosocial model conceptualises substance-related disorders as a variety of syndromes whose severity lies on a continuum. The advantage of this approach is that it incorporates complementing and competing factors of other theories and encourages one to review all the problems that contribute to the addiction. This model not only reflects on the causes of an addiction, but provides a means of conceptualising the individual’s subjective experience of the addiction (Alcohol and Drug Services, 1996).
A central principle of the biopsychosocial model is self-determinism, which highlights the role of individual choice in the development of an addiction. This perspective is valuable as it moves away from previous mechanistic and deterministic theories that excluded the individual’s role in the development of a substance-related disorder. This principle is beneficial in terms of the present study as it will place emphasis on the role of the participants’ choice and subsequent interactions among the different variables. The approach thus acknowledges the diversity among individuals and enforces respect for such differences (Addictions Foundation of Manitoba, 2000; Kumpfer et al., 1990). In addition to this, the inclusive nature of the biopsychosocial model (Pilgrim, 2002), is suitable for a study through which the subjective experience of the phenomenon must be obtained through theoretical saturation.

Clinicians and researchers are strongly influenced by their theoretical orientation. The framework of any theory can influence interactions with clients or participants, will determine how these individuals are conceptualised, what information is important, how that information is used and guides the treatment plan (Kumpfer et al., 1990). Another advantage of the biopsychosocial model is that it emphasises the importance of a comprehensive and accurate investigation of the substance misuse. This broad exploration integrates different perspectives that allow the researcher to conceptualise the participants in a holistic manner through which any treatment can be tailored to the specific needs and according to the severity of the substance-related disorder (Alcohol and Drug Services, 1996).

The biopsychosocial model has previously been criticised for prioritising biological factors above psychological and social factors, despite its emphasis placed on all three categories (Kumpfer et al., 1990). Conversely, the model has also been criticised for not specifically assigning status to each of the categories so that primacy can be determined. Furthermore, the model does not consistently provide sufficient insight into how factors from
one category result in manifestations in another category of factors (Kinderman, 2005). It is unlikely that these criticisms will negatively impact the study, despite the biological factors that dominate the available literature. A possible concern in terms of the present study would be the risk of over-inclusion. The holistic model allows for numerous factors to be considered and the inclusion of all the factors could detract from the essence of the cocaine addiction. The biopsychosocial model of cocaine addiction and dependence will be reviewed in Chapter Three.

2.8. Conclusion

This review of literature contextualised drug abuse within South Africa by highlighting the invasive nature of illicit substances as well as the various structures that facilitate the development of drug networks. The literature provided an understanding of the extent of drug abuse within society and the implications of this social problem on the country. A brief account of the history of cocaine described the gradual establishment of the drug throughout the world and identified significant events that contributed to its integration within society. The history also highlighted the relatively short period of time during which cocaine’s popularity peaked and how its prevalence has continued to increase. The description of the clinical effects of the drug highlights the potency of cocaine and its impact on the user. The chronological account as well as the clinical effects of cocaine provided insight into the mechanisms that have resulted in it becoming the third most commonly abused substance in South Africa.

The vast spectrum of drug use and drug-related behaviour has created difficulty in distinguishing between problematic and non-problematic drug use. The distinction between the varying severities of drug use is achieved through an explanation of five different levels of substance use. A review of the DSM IV – TR classification of substance-related disorders
contextualised the basis of this study. The description of substance dependence provided insight into this social phenomenon that is being investigated. In addition to this, a brief overview of a few biological, psychological and social models provides an understanding of the diverse etiological factors of addiction. The chapter is concluded with a review of the biopsychosocial model which provides a congruent and comprehensive framework to conceptualised cocaine dependency. Chapter Three forms a continuation of the literature review and will focus specifically on the biopsychosocial model of cocaine addiction and dependence.
Chapter Three

The Biopsychosocial Model of Cocaine Dependence

3.1. Chapter Overview

Chapter Three provides a biopsychosocial exploration of cocaine dependency. The biopsychosocial model is a contemporary psychological perspective that provides an integrated framework for conceptualising the dynamic factors involved in human behaviour. The model incorporates a number of facets that influence a person’s psychological health or pathology, and categorises them into three predominant factors, namely psychological processes; biological determinants; as well as social influences (Bourne & Russo, 1998; Myers 1998).

The holistic approach of the biopsychosocial model provides an integrated perspective of the development and subsequent consequences of addiction (Van Wormer & Davis, 2008). A review biopsychosocial factors provides insight into how an individual responds to drugs as well as how such factors may influence the development of a substance-related disorder (Maisto, Galizio & Connors, 1999). Thus cocaine addiction can be conceptualised in terms of the contributing biological, psychological and social risk factors that encourage the use of the drug and discourage the individual from abstinence (Gorski, 2003). A review of the Biopsychosocial Progressive Symptom Model provides a framework for the progressive nature of addiction according to the DSM – IV TR criteria of substance dependence. This model provides an understanding of the biopsychosocial aspects involved in the development of cocaine dependence. The model also highlights the biopsychosocial deterioration that occurs as a result of cocaine-dependence. This deterioration can be further understood through the exploration of the long-term biological, psychological and social consequences of cocaine dependence.
3.2. The Biopsychosocial Model of Cocaine Addiction

The biopsychosocial model provides a framework to review the prevalent contributing biological features, psychological characteristics and social factors that influence the development of a cocaine addiction. The factors from each of the categories play a significant role in the initial use of cocaine, the individual’s response to cocaine as well as factors that motivate future cocaine use and lead to eventual misuse of the substance (Kumpfer et al., 1990).

3.2.1 Contributing Biological Factors of Cocaine Addiction

Individual biological characteristics have a significant influence on a person’s experience of a drug and the possibility of repeated use of the substance. A person’s gender and weight determine the concentration of the drug within the body and varying concentrations would either reduce or increase the effect that the drug. Similarly, the duration of the drug’s effect is proportional to an individual’s body fat. Women tend to have a higher body fat percentage and are thus more likely to experience the effects of a drug for longer (Maisto et al., 1999). Previous studies have highlighted that the likelihood of developing cocaine dependence is equal between men and women, but female cocaine addicts develop dependence more rapidly then male cocaine addicts (McCance-Katz; Carroll; Rounsaville 1999; Wagner, 2006). In addition to this, the person’s age would also affect how quickly and efficiently the body can metabolise the drug. Younger or elderly individuals may experience increased toxicity or duration due to underdeveloped or impaired metabolic functioning (Maisto et al., 1999). Furthermore, the highest use of cocaine occurs within the 18 – 25 year old group with a slight decrease in use among 26 – 34 year olds (Sadock & Sadock, 2003).

Research has suggested that possible genetic patterns may exist in substance-related disorders as the likelihood of developing an addiction is increased with the presence of
substance dependence within a nuclear family. However, there is a greater risk of addiction when a comorbid psychiatric disorder is present. A strong genetic link has been identified in the familial transmission of certain psychiatric conditions, such as mood or psychotic disorders, which make the individual more susceptible to using drugs. Studies have found that within the substance abusing population, cocaine abusers are the most likely to have a comorbid psychiatric condition such as major depressive disorder, generalised anxiety disorder and attention deficit/hyperactive disorder (Coombs, 2004; Sadock & Sadock, 2003; Carroll, Rounsaville & Byrant, 1993). The varying effects of the drug caused by an individual’s biological characteristics would determine the physiological experience of the drug. This physiological response would play a significant role in the reinforcement of future drug use or a decreased interest in drug use (Gorski, 2003).

3.2.2. Contributing Psychological Factors of Cocaine Addiction

The psychological component refers to psychological processes that reinforce or discourage drug use and how these factors can lead to the development of a substance-related disorder. Personality, defined as a cluster of characteristics, has been identified as a prominent psychological feature in substance-related disorders. Zuckerman (2005) highlights that sensation or novelty seeking is a possible personality trait associated with drug use. Research has indicated that there is a proportional relationship between sensation seeking and the use of drugs as well as the variety of drugs that are used. This relationship is understood in terms of the individual’s sensitivity to the effects of the drug which influences the intensity of the intoxicated experience. Thus a heightened experience would be a strong reinforcing variable for a sensation-seeking individual (Maisto et al., 1999).

Previous studies have suggested a strong association between low self-esteem and cocaine abuse. The research suggests that addiction is more prevalent among individuals who
have poor self-perceptions and who engage in negative self-evaluation (Coombs, 2004). Closely linked to this is self-efficacy, which is the individual’s perception of control in certain situations. One study indicated that individuals with low self-efficacy are more vulnerable to using drugs in high-risk situations as they lack the confidence and skill to negotiate such situations successfully (Fieldman, Woolfolk & Allen 1995).

Pathological psychological characteristics, such as those observed in personality disorders, have also been identified as contributing factors in the development of an addiction. Studies have found that a large proportion (between 30 – 75%) of cocaine dependents exhibit clusters of personality disorders (Skinstad & Swaine, 2001). One study highlighted that 48% of the cocaine dependents had a diagnosable Axis II disorder and that 18% exhibited two or more personality disorders (Barber et al., 1996). Research has found that Cluster B personality disorders (antisocial, borderline, histrionic and narcissistic) are the most prevalent among abusers, followed by Cluster C personality disorders (dependent, avoidant, obsessive-compulsive and passive-aggressive), and lastly Cluster A personality disorders (paranoid, schizoid and schizotypal). The Cluster B personality disorders, Antisocial and Borderline were identified as the most prevalent among cocaine dependents (Barber et al., 1996; Skinstad & Swaine, 2001). A similar study found that more than two thirds of the cocaine dependent sample met the criteria for at least one personality disorder. Within this group, it was found that 34% of the dependents met the criteria for Borderline Personality Disorder, 28% met the criteria for Antisocial Personality Disorder and 28% met the criteria for Narcissistic Personality Disorder (Kranzler, Satel & Apter, 1994).

A recent study highlighted that female cocaine addicts reported a higher incidence of physical or sexual trauma prior to substance use. The research also indicated that the psychiatric condition, Post Traumatic Stress Disorder, is three times more prevalent among female cocaine dependents than male addicts (Najavits & Lester, 2008). Similarly, attention
deficit/hyperactive disorder and anxiety disorders have been identified as prominent pre-existing psychiatric conditions in the development of a cocaine addiction (Sadock & Sadock, 2003).

An individual’s cognitions influence how the individual perceives cocaine and the use of the drug. A significant element of cognitions is their anticipatory beliefs or expectancies related to the use of cocaine. The person’s belief and expectation that the drug will produce specific effects influences the experience of the drug. Thus positive beliefs and expectation may produce more favourable experiences than negative beliefs or expectations, and these cognitions will either encourage or discourage the use of cocaine (Maisto et al., 1999; Wanigaratne, 2006).

This relationship was confirmed in a phenomenological study that explored the attitudes, feelings and beliefs of addicts as well as their motivation to use cocaine. The participants reported both positive and negative effects that they experienced when using cocaine. In addition to this, they highlighted that positive experiences occurred with initial use of cocaine and that negative effects occurred with prolonged use. However, despite the negative experiences associated with prolonged use, the participants were motivated to continue using cocaine due to the perceived positive effects of the drug. The study found that addicts who reported a lack of acknowledgement within their social environment and low self-esteem experienced induced feelings of empowerment and self-worth when using cocaine. Many participants reported that their use of cocaine reproduced experiences that were similar to those of their childhood and young adulthood, in which they felt liberated to experience themselves as more powerful. This power was also associated with the perception that barriers or challenges in self-actualisation could be overcome. The addicts described their cocaine use as a method of self-validation to compensate for their perceived lack of personal power. In some instances, the participants reported induced feelings of superiority that was
characterised by sense of competency, control and conviction in their thoughts, feelings and behaviour. The cocaine addicts’ belief that the cocaine would produce positive self-perceptions reinforced their drug taking behaviour despite the negative consequences that they experienced (Glauser, 1995).

3.2.3. Contributing Social Factors of Cocaine Addiction

The third component of the biopsychosocial model encompasses social or environmental factors that influence the development of an addiction. These social and environmental factors exist on a number of levels, ranging from social groups to environmental or societal influences (Maisto et al., 1999).

Psychosocial stressors associated with the development of a substance-related disorder include stress experienced at work or through unemployment as well as economic uncertainty and poverty. An individual’s home circumstances and family can create significant stress through instability, frequent fighting, overcrowding and abuse. Social and cultural influences play a significant role in the development of an addiction. The drug may be sanctioned through cultural norms that encourage its continued use and eventually result in dependence (Coombs, 2004; Van Wormer & Davis, 2008). Research has also indicated that cocaine addicts who experience higher levels of stress within their social environment tend to use cocaine for longer periods of time (Karlgodt, Lukas & Elman, 2003). Furthermore, female cocaine addicts reported higher frequencies of family problems and socio-economic concerns that aggravated their use of the drug (Najavits & Lester, 2008).

Environmental influences such as employment and the characteristics of an individual’s occupation can also influence the use of drugs. The lack of availability of jobs as well as decreased job security can cause significant stress that may encourage the use of drugs. One study focusing on job characteristics and drug abuse found that cocaine use was strongly
influenced by the level of autonomy and variety that an individual occupation provided. The study found that greater job variety reduced the likelihood of cocaine use by 64% and speculated that employees may use the cocaine to increase alertness or decrease the need for sleep. In addition to this, a positive relationship was identified between cocaine use and the level of job autonomy. Individuals with more autonomy are approximately four times more likely to use cocaine. The researchers highlighted that the use of cocaine may be related to the employees desire to enhance creativity and feelings of power that they deem necessary to meet their occupational demands and cope with additional responsibilities (Zhang & Snizek, 2003).

Other contributing social factors of cocaine addiction include the use of drugs as a result of peer pressure and its continued use through social interactions and peer influence (Witteveen, Van Ameijden, Prins & Schippers, 2007). A study based on drug-using couples found that such social relationships were characterised by collusion in which both partners actively engaged each other to acquire and use drugs. This mutual involvement by partners in an intimate relationship formed a strong reinforcing component in their addiction (Simmons, 2006). In addition to this, the nature of the group also influenced the priorities of its individuals, such that drug-centred groups encourage the trade and use of drugs by its members (Pilowsky et al., 2007).

Co-dependence refers to the behaviour of an addict’s family or social relations that has developed as a result of the drug use. Central to co-dependence is enabling and denial in which family members experience difficulty acknowledging the addiction and the need for intervention. This behaviour facilitates the addict’s substance use and often results in displaced responsibility for the problem (Sadock & Sadock, 2003). A study of family dysfunction and cocaine addiction found that in some families the child’s cocaine addiction
was functional in maintaining homeostasis and coalitions within the family unit (Tavares Pinheiro, 2006).

Traditionally cocaine was associated with higher socio-economic status, often being referred to as a drug for select populations (Levinthal, 2008). Increases in the drug trade as well as other economic factors have altered the social status associated with cocaine. A large global survey conducted by the World Health Organisation, found significant variation among the types of people who used cocaine (Peele & DeGrandpre, 1998). Another study revealed that two distinct social groups of cocaine users exist. These groups were defined by differences in their socio-economic status and the method of cocaine administration. Cocaine users from higher socio-economic contexts predominantly used cocaine for recreational purposes and favoured intranasal ingestion. Many of the members within the higher socio-economic group were identified as professionals with higher levels of education. The second group of cocaine users stemmed from lower socio-economic backgrounds that predominantly administered the cocaine intravenously. High rates of unemployment and poor education were also identified among the members of this group (Shearer et al., 2007).

Other contributing environmental factors include the availability of cocaine as well as the influence of the government in terms of its judicial system and corresponding sentences for drug-related crimes (Maisto et al., 1999).

The biopsychosocial model highlights the dynamic relationships between biological, psychological and social factors that predispose and encourage the use of drugs, particularly cocaine. These factors can act independently but more commonly exert mutual influence that culminates in the development of a cocaine addiction. In the next section, insight into the contributing factors of a substance-related disorder is supplemented with a review of the progression from cocaine use to cocaine dependence.
3.3. The Biopsychosocial Progressive Symptom Model

The Biopsychosocial Progressive Symptom Model focuses on the development of reinforcing symptoms involved in substance dependence. The model was developed by reviewing previous addiction models and integrating these factors into a sequence that is commonly identified in the development of substance dependence (Gorski, 2003).

The model states that initial use of the substance results in physiological reactions. These reactions cause the individual to experience biological reinforcement which promotes the future use of the drug. In terms of cocaine use, the person’s primary biological reinforcement is the neurobiological effect that cocaine has on the dopaminergic processes. Through continued use of the substance, the individual develops tolerance to the substance and requires increased amounts of cocaine to achieve previously experienced biological reinforcement (Gorski, 2003; Karch, 2007).

As a result of the biological reinforcement, cocaine users are likely to ingest the substance at more frequent intervals or to increase the quantity of cocaine that is ingested at each interval. When the individual abstains from use, the person experiences symptoms associated with cocaine withdrawal syndrome. Cocaine users experiencing withdrawal may exhibit marked dysphoria, anhedonia, fatigue, anxiety and irritability lasting up to a week (Coombs, 2004; Gorski, 2003). The development of tolerance and withdrawal then leads to a loss of control as the individual is no longer able to manage or moderate the quantity of substance used as well as the duration of use. This loss of control leads to the inability to maintain any attempts at abstinence (Gorski, 2003). Cocaine users may fail to abstain due to the intensity of the withdrawal symptoms caused by acute intoxication through increased quantities of the substance. This often results in intense cravings and self-medication of the withdrawal symptoms (Gorski, 2001).
The increased involvement in drug-related activities results in the development of an addiction-centred lifestyle. This lifestyle is characterised by an increased frequency in behaviour associated with acquiring and using the drug as well as recovering from intoxication. As the person’s lifestyle becomes more focused on the use of the drug, the individual undergoes progressive addictive lifestyle losses. In many cases, the individual stops engaging in previously valued activities as a result of the cocaine use. The development of the addiction-centred lifestyle is mirrored by the progressive development of biopsychosocial substance-related problems. These include physiological complications and disturbances in the individual’s psychological functioning caused by the cocaine, as well as impairment in social functioning or disruption in social relations (Gorski, 2003; Sadock & Sadock, 2003).

The progressive development of substance-related problems eventually becomes overwhelming for the individual. However, this knowledge of the problems caused by the drug does not instigate the resolution of these problems. Instead, the individual withdraws from conscious awareness of the problems while the anguish of the substance use and its related problems amplifies the craving for the drug (Gorski, 2003). This is often understood in terms of denial by the user, whose conscious awareness recedes as a self-protecting measure from the pain that is being experienced (Sadock & Sadock, 2003). The continued use, despite the increasing problems, eventually leads to biopsychosocial deterioration. This deterioration continues until the individual experiences serious physical and/or psychological illness, suicide, death, or becomes involved in a treatment programme (Gorski, 2003).

The Biopsychosocial Progressive Symptom Model highlights the development of cocaine dependency in terms of the contributing biological, psychological and social factors. The model emphasises important processes which prevent the addict from abstaining despite awareness of the negative consequences resulting from the continued drug use. In the
following section, the biopsychosocial deterioration of cocaine dependency can be described through the review of the adverse biological, psychological and social effects of long-term cocaine use.

3.4. Effects of Long Term Cocaine Dependency

Extensive research has been conducted to determine the consequences of long-term cocaine use. Much of this research has focused on the adverse neurobiological effects of continued cocaine use. In addition to the neurological damage caused by the substance, chronic cocaine use can cause other physiological complications as well as psychological impairments and social dysfunction (Van Wormer & Davis, 2008). A review of these effects provides insight into the biopsychosocial deterioration that cocaine dependents experience.

3.4.1. Biological Effects of Cocaine Dependency

The biological effects of long-term cocaine dependency refer to physiological changes and deterioration as a result of cocaine use. Owing to the high number of adverse biological complications, a select few will be discussed based on their prevalence and severity. Cocaine is the most prominent cause of drug-related medical complications, with approximately 60% of cocaine-related deaths occurring as a direct result of cocaine toxicity (Karch, 1999). These complications are commonly the result of over-stimulation of the central nervous system and sympathetic nervous system. Medical complications due to cocaine intoxication within the central nervous system include headaches, ischemic and haemorrhagic strokes, neurological deficits, seizures, toxic encephalopathy and comas. Cardiovascular complications caused through cocaine use include hypertension, arrhythmia, myocardial complications as well as sudden death. Respiratory problems caused by cocaine include pulmonary oedema, pneumonia thorax and respiratory arrest. Renal failure, coagulopathy and hyperthermia,
which can result in brain damage, are metabolic conditions that can occur through chronic cocaine use while placental abruption and spontaneous abortions are common in pregnant cocaine abusers. Different methods of administration may also cause physiological complications. Cocaine addicts who administer the drug intravenously are at risk of contracting HIV/AIDS and hepatitis or may develop infections at injection sites. Users that engage in intranasal administration of the drug can develop sinusitis with brain abscesses (Karch, 2007).

The significant neurobiological affects of the drug has lead to cocaine dependency being described as a disease of the brain. These neurobiological alterations within the brain are associated with psychological complications that perpetuate the addiction (Karch, 2007). Cocaine simultaneously stimulates the release of dopamine while inhibiting the reabsorption of dopamine within the synapse, thus affecting the brain’s reward or pleasure mechanisms (Sadock & Sadock, 2003). Cocaine manipulates this process by stimulating the release of dopamine even after the behaviour has been learned. As a result of this continued stimulation, the user ‘over-learns’ behaviours associated with cocaine use. The repeated use of cocaine eventually results in neurological adaptations within the brain that encourage compulsive behaviours in cocaine addicts (Haile, Kosten & Kosten, 2007; Kalivas, 2007).

Cocaine is the most prominent illicit drug associated with vascular toxicity. Physical complications such as coronary spasms resulting from the vasoconstriction have been identified as the likely cause of sudden cardiac death in younger cocaine addicts. In addition to this, studies based on autopsies have indicated that coronary thrombosis and lesions of major arteries were prevalent in more than a third of cocaine users. These cardiac complications are thought to be aggravated by accelerated atherosclerosis that is common among cocaine addicts (Karch, 2007). Research has found that pulmonary congestion, oedema and alveolar haemorrhage are the most common pulmonary effects in addicts that
smoke freebase or crack cocaine, with more than 70% of the autopsies revealing each of these changes (Bailey, Fraire, Greenberg, Barnard & Cagle, 1994, in Karch, 2007).

Cocaine is a common cause of drug-induced cerebrovascular disease or stroke. This commonly occurs in the cerebral hemispheres with symptoms presenting within hours of using the cocaine. It is also known to lower the threshold for seizures. However cocaine-induced seizures tend to be briefer than those caused by other drugs. Cocaine intoxication delirium is common with individuals who use high doses of cocaine over a short period of time. The chronic use of cocaine reduces the metabolism of dopamine to the extent that the delirium is triggered by the decreased levels dopamine in the brain. The induced delirium may occur with all methods of administration and is often characterised by agitation and hyperthermia that may lead to respiratory arrest and death (Karch, 2007; Sadock & Sadock, 2003).

Cocaine is often used as an aphrodisiac that can prolong an orgasm, but erectile dysfunction can occur during intoxication and if used repeatedly, cocaine could result in impotence (Sadock & Sadock, 2003). In addition to sexual dysfunction, research has indicated that cocaine dependents may engage in unsafe sexual practices that result in other physical complications such as the contraction and spread of diseases. A study exploring the association between cocaine use and sexual behaviour found that individuals that have recently used cocaine are at a significantly higher risk of engaging in unsafe sexual practices that could result in the contraction of a sexual transmitted disease or HIV (Raj, Saitz, Cheng, Winter & Samet, 2007). The Centre for Disease Control and Prevention has also estimated that the infection rate of Hepatitis C is between 50 – 80 % for individuals engaging in intravenous administration of drugs (NIDA, 2004)

Addicts may also develop cocaine-induced sleep disorder in which they experience the inability to sleep while intoxicated and experience disrupted sleep during withdrawal (Sadock
One study investigating the relationship between cocaine use and sleep deterioration found that addicts often lack an awareness of the sleep disturbances caused by their cocaine use. The study highlighted the possibility that cocaine addiction and cocaine-related sleep disturbances interact bi-directionally thus each problem perpetually aggravates the other (Pace-Shott et al., 2005).

Cocaine causes the bronchial muscles to relax and the nasal blood vessels to constrict when snorted. When the effects of cocaine wear off, the bronchial muscles contract and there is less constriction in the nasal blood vessels. The changes caused by the cocaine result in cocaine dependents experiencing problems with their noses (Willis, 1997). Chronic intranasal cocaine users are prone to problems such as nosebleeds, nasal stuffiness, nasal irritation, nasal crusting and sinusitis caused by the effects of the substance. These complications are often aggravated by the cocaine user who is likely to pick at the irritations experienced in the nose. Prolonged and heavy use of snorted cocaine can result in lesions or perforations on the septum of the nose, often causing breathing problems (Arkangel, 2008; Levinthal, 2008). Long-term use of cocaine may result in various combinations of physical complications. These adverse effects develop and manifest differently among cocaine users, with some users exhibiting less physical deterioration and others having more rapid and fatal physiological complications (Karch, 2007).

3.4.2. Psychological Effects of Cocaine Dependency

Psychological impairment and dysfunction is a prominent effect of long-term cocaine use. Studies have suggested a strong correlation between progressive cocaine use and impaired psychological functioning. The psychological effects of prolonged cocaine dependency vary in severity and can manifest in a number of behaviours (Kasarabada,
Prominent negative psychological consequences of cocaine dependence will be reviewed to illustrate the detrimental effects of the substance.

Cocaine has been identified as the cause of mood and anxiety disorders, where symptoms develop within one month of using the substance. Characteristics of cocaine-induced mood disorders differ depending on whether the onset is during intoxication or withdrawal. Symptoms of cocaine-induced mood disorder that develop during intoxication mirror manic symptoms, while those develop during withdrawal are associated with depression. Symptoms of cocaine-induced anxiety disorder are similar regardless of whether the onset occurs during intoxication or withdrawal and are characteristic of panic disorders, phobias and obsessive-compulsive disorder. The diagnosis of a cocaine-induced mood disorder only requires the presence of one symptom associated with a particular mood disorder, such as depressed mood or decreased interest in activities. This may cause uncertainty in accurately diagnosing individuals as it may be difficult to determine whether the mood symptoms are the result of cocaine use or are independent symptoms of an Axis I disorder (Sadock & Sadock, 2003; Siqueland, et al., 1999).

Research has also found that cocaine dependents experience marked difficulties in the regulation of their emotions and exhibit poor impulse control. In addition to this, these psychological impairments persist even during abstinence with a decreased awareness and understanding of emotions among cocaine dependents. Cocaine dependents displayed significant difficulty inhibiting inappropriate or impulsive behaviour when experiencing stress. The implications of poor emotional regulation and impulse control resulting from cocaine dependence could also function as reinforcement for the addiction (Fox, Axelrod, Paliwal, Sleeper & Sinha, 2007).

Cocaine-induced psychotic disorder can occur in up to fifty percent of cocaine users depending on the dose and duration of use as well as the individual’s sensitivity to the effects
of the drug. The most common symptoms identified in this disorder are paranoid delusions, auditory hallucinations and formication which is the sensation of bugs crawling under the skin. In addition to these prominent symptoms, individuals may engage in inappropriate or bizarre behaviour and may become aggressive as a result of the delusions (Sadock & Sadock, 2003). A study into the relationship between cocaine addiction and psychotic disorders has revealed that symptoms triggered by cocaine occur in a hierarchical structure that is influenced by the level of intoxication. The initial symptom in the cocaine-induced psychotic disorder is mistrust. As the intoxication or dose of cocaine is increased, the mistrust is then followed by delusions of reference that create fear, and later delusions of persecution that are characterised by anxiety and panic. Following the delusions is the development of auditory hallucinations that the cocaine user experiences as threatening. Lastly the cocaine user displays disorganised behaviour resulting from the previous psychotic symptoms (Franzek & Elsenaar, 2008). Another study found that cocaine-induced paranoia was strongly associated with an existing diagnosis of attention/deficit disorder and that individuals with attention deficit experienced more severe delusions and hallucinations (Tang et al., 2007).

The neurobiological adaptations of the dopaminergic neurons may manifest in other disruptive behaviour. The influence of cocaine on the brain’s reward systems may cause cocaine addicts to engage in other repetitive reward seeking behaviour. A recent study highlighted that more than a third of the cocaine using participants engaged in activities such as videogames, collecting things, repairing or dismantling things, painting and playing music as common repetitive reward seeking behaviours. The research also found that 8% of the participants engaged in punding, a severe form of repetitive reward seeking behaviour. Punding is defined as self-soothing repetitive behaviour characterised by intense curiosity or fascination, including manipulation of objects, grooming, and engaging in monologues that
lack content. The behaviour is non-goal directed but often results in the addict becoming withdrawn and unresponsive (Fasano et al., 2008).

Chronic cocaine users are prone to experiencing transient paranoia during binges and intense cravings towards the end of binges. Both these experiences can also lead to disruptive and repetitive behaviour. Prolonged cocaine use may result in compulsive foraging, in which the addict searches for small quantities of the drug that may have been dropped or misplaced. This foraging is either fuelled by the paranoid belief that some of the drug may have been lost or as a desperate response to the cravings the individual experiences. In most cases, the cocaine addict is aware that no drug will be found but remains compelled to seek it out (Rosse, Fay-McCarthy, Collins, Alim, & Deutsch, 1994).

Research conducted by Rosselli, Ardila, Lubomski, Murray and King (2001), highlighted neuropsychological impairments caused by chronic cocaine use using a variety of psychometric measures. Their study confirmed findings from previous studies regarding cognitive deficits caused by prolonged cocaine abuse and identified a trend of decreased scores across all psychometric measures. In addition to this, significantly low scores were obtained on the WAIS –R Arithmetic and Digits subtests as well as the copy condition of the Rey-Osterrieth Complex Figure Test. The deficits in nonverbal and verbal memory as well as abstraction result from damage in the frontal and temporal lobes. Furthermore, the study reported that chronic cocaine use by a polydrug user has also been found to produce dementia that does not reverse after abstinence. These psychological effects highlight the detrimental nature of chronic cocaine use. The impairment in psychological functioning can also influence the individual’s social relationships and functioning.
3.4.3. Social Effects of Cocaine Dependency

The social facet of the biopsychosocial model refers to the context and environment of the individual. Cocaine dependents interact with a number of complex social systems that are influenced by the use of the drug. The adverse social effects of prolonged cocaine use are often manifested in the deterioration of social relationships or difficulties with social organisations and structures within the drug user’s environment (Levinthal, 2008).

Chronic cocaine use can have several implications for the dependent’s families and social relationships. Numerous research studies have found a link between substance use and aggression. Some studies have found up to 50% of individuals receiving substance-related treatment have experienced partner violence. Aggression associated with substance abuse includes psychological aggression, physical aggression and aggression resulting in injury (Chermack & Blow, 2002). Research has also highlighted the detrimental effects of substance-related disorders on intimate relationships. A recent study of partner aggression found that 77% of participants reported psychological aggression and 54% reported physical aggression. In addition to this, 33% of the substance abusers reported injuring their partners. The study also concluded that alcohol and cocaine were the two substances most commonly associated with the aggression (Chermack, Murray, Walton, Booth, Wyrobeck & Blow, 2008).

Substance-related disorders may result in adaptation. This refers to a family’s response to the dependents behaviour and addiction. The family’s adaptation is aimed at reducing or alleviating stress caused by the addiction and may manifest in a number of passive or active behaviours. Cocaine dependency can result in negative adaptation by the family by influencing a member’s normal behaviour or in more severe cases may encourage the use of drugs by other family members (Van Wormer & Davis). One study into the influence of cocaine dependence found a significantly high prevalence of drug abuse among siblings of
The research indicated that siblings of cocaine dependents reported a higher frequency of drug experimentation than siblings of non-dependents. In addition to this, the siblings of dependents were at a higher risk of developing cocaine dependence than siblings within the control group. The study attributed the increased risk of cocaine use and eventual dependency on the availability of cocaine through the cocaine dependent sibling (Bierut, Strickland, Thompson, Afful & Cottler, 2008).

The social networks of drug addicts may influence the pattern and duration of drug use. Research of social networks has focused on the relationship between the use of drug and drug-using peers, and in particular, the direction of this relationship. Studies have found that drug users are more likely to develop social ties with other drug users whose behaviour is similar to their own (Buchanan & Latkin, 2008). As with other drug users, cocaine dependents may become progressively more integrated into drug-using social networks that normalise their addiction and simultaneously promote the use of other drugs (Bierut et al., 2008). Another study found that size of drug users’ social networks was proportional to the level of unsafe sexual practices. Thus addicts who were members of larger social networks were more likely to engage in risky sexual behaviour than addicts from smaller social networks (Pilowsky et al., 2007).

A review of literature indicated that children of substance-abusing parents, such as cocaine-dependent parents, have a high risk of experiencing negative life events. The abusing parent’s compromised ability to provide adequate levels of emotional support and protection is often characterised by poor communication, inadequate boundaries and an inability to achieve family cohesion. In addition to this, substance-abusing parents display poor decision-making skills and lack effective parenting skills. This familial dysfunction makes children vulnerable to physical and sexual abuse, self-destructive behaviour (including substance abuse) and creates a high potential for suicide attempts. The problem is further complicated
by isolation through the drug use from other social networks that would have previously provided support and protection (Collings, 2006; Ovens, 2006).

Long periods of unemployment are common among cocaine dependents who display decreased occupational functioning (Platt, 1995). Effects of the substance, such as cocaine, impair an individual’s judgement, resulting in irresponsible behaviour and work-related accidents. In addition to this, addicts experience lack of motivation and health deteriorations which result in decreased productivity and increased absenteeism. The financial implications for employers are significant and in many instances such behaviour results in dismissal (Heidel, 2007). The dependent’s compromised occupational functioning and possible dismissal may lead to extended periods of unemployment, during which the drug use is perpetuated (Carpendo et al., 2007).

The inability of a cocaine addict to obtain and maintain employment often results in poor response to treatment interventions and possible criminal activity. Studies have found that substance abuse is prevalent among incarcerated prisoners, with many reporting that they had received sentences for crimes that were committed in order to obtain money for drugs. Studies have also highlighted an increase in street crime in relation to cocaine as well as a proportional relationship between cocaine use and the frequency of crimes committed by cocaine abusers (Husband & Platt, 1993; Platt, 1995). A study into adult recidivism highlighted that the use of substances reduced an individual’s conscience to the extent that criminal activities were encouraged. The study also highlighted that addiction was a prevalent factor in the participation of gang activities and continued self-destructive lifestyles, and is thus considered one of the main contributing factors in recidivism (Gaum, Hoffman & Venter, 2006).
3.5. Conclusion

Chapter Three provided a review of literature pertaining to cocaine dependency and conceptualised the literature in terms of the biopsychosocial framework. The integrated and holistic nature of the biopsychosocial model provided an effective framework for the exploration and description of cocaine dependency. Using the biopsychosocial model, Chapter Three highlighted the biological, psychological and social factors that contribute in the development of cocaine addiction. Knowledge of these factors is important in understanding which individuals are more vulnerable to developing a cocaine addiction and what factors may predispose them or increase their risk of cocaine dependency. These contributing factors were supplemented with Gorski’s (2003) Biopsychosocial Progressive Symptom Model. This model effectively illustrated the progression from cocaine abuse to cocaine dependence according to the DSM IV – TR criteria and integrated the contributing biological, psychological and social factors of substance dependence. The chapter also provided an account of the long-term effects of prolonged cocaine use. This section was organised in term of the biological, psychological and social deterioration that is observed among cocaine dependents. The biopsychosocial sequelae of cocaine provided further understanding of the potency of the drug and emphasised detrimental consequences of cocaine dependency.

Chapter Three explored the important aspects of cocaine dependency that are relevant to the present study. This knowledge of risk factors in the development of cocaine dependency provided background to the potential information that the participants will provide during the interviews. A review of literature regarding the biopsychosocial deterioration of cocaine addicts highlighted the negative consequences that the research participants may report. The descriptions of the biological, psychological and social facets of this social phenomenon are used to identify and understand key elements that will be form the focus of the study.
Chapter Four provides a review and discussion of the research methodology. The chapter will focus on the specific research design as well as the advantages and disadvantages of this study’s methodology. In addition, the chapter will review the process of data collection and analysis as well as ethical considerations of the present study.
Chapter Four
Research Methodology

4.1 Chapter Overview

Chapter Four provides a description of the methodology of the present study. Included in this chapter is a discussion of qualitative research designs used to illustrate complex social phenomena such as cocaine dependency. A review of the research design provides a description of the transcendental phenomenological approach that was used in this study. To provide insight into this specific approach, the chapter explores four major processes in phenomenological research, namely (1) epoche, (2) phenomenological reduction, (3) imaginative variation and (4) synthesis. In addition, the chapter highlights how these processes were incorporated into the present research design.

The chapter continues with a review of data collection methods and outlines the research procedure. The discussion of this methodology also provides an account of the setting in which the research occurred, sampling procedures that were implemented as well as observations made during the study.

Ethical considerations form a central aspect of research methodology. This chapter provides a review of the pertinent ethical issues related to the present study as well as how these considerations were implemented in the research design. A review of data processing and analysis is also provided with specific reference to Tesch’s (1990) content analysis as well as Lincoln and Guba’s (1985) model of trustworthiness. The chapter concludes with a description of how these models were incorporated into the phenomenological research design.
4.2. Research Design

Contemporary psychology provides researchers with the ability to explore experience and meaning within a variety of social phenomena. This type of investigation is primarily achieved through qualitative research methods (Smith, 2003) in which the focus shifts from a traditional analysis of the cause-and-effect relationship to the nature and texture of the experience (Willig, 2003). Qualitative research designs study human behaviour that cannot be approached with quantitative methodologies. Primarily, it can be used to capture the experience as an entity as opposed to focusing on specific aspects of the phenomenon. Unlike quantitative research methods, qualitative research designs do not impose predetermined theoretical frameworks which have the potential to distort rather than to illuminate human behaviour, but aim to obtain comprehensive descriptions that can be used in a reflective process. This is achieved through the investigation and description of the meanings attached to an experience and not the measurement or explanation of its occurrence. Data obtained through qualitative research is essential in developing an integrated understanding of phenomena that can then be translated into evidence for further quantitative research (Moustakas, 1994).

Qualitative research designs tend to incorporate interpretive and critical approaches to social sciences, and thus adopt a transcendent perspective. Through this perspective, research participants are viewed as creative and compassionate beings and not objects of research interest. Consequently, such designs create an awareness of power or inequality and strive to acknowledge the role of social relations within a given study (Neuman, 2003). Furthermore, qualitative methodologies emphasise the interest, contribution and commitment of the researcher within the investigation (Moustakas, 1994). This attitude towards social investigation facilitates the aim of qualitative research designs to assist people in
transcending their current social conditions through growth, increased responsibility for one’s own life and active engagement in social change (Neuman, 2003).

The present study adopted a phenomenological research design in that it is descriptive yet analytical in nature (Miller & Salkind, 2002). The qualitative nature of the research implies that the research was non-experimental and thus focused primarily on the words, sentences and impressions provided by the participants (Neuman, 2003). In addition to this, the research design is analytical as it was used to capture the quality and texture of the participants’ experiences while simultaneously unravelling the meaning attached to the phenomenon through its inductive nature (Gray, 2004; Willig, 2003). As such, phenomenology cannot be defined as a science of objects or subjects, but rather the science of experience. However, unlike other approaches the methodology of a phenomenological study does not include sequential techniques but incorporates an understanding of processes which are used for guidance to develop plans that are appropriate for the investigation of the phenomenon. From a phenomenological perspective, the application of prescribed techniques within such a study could reduce the integrity of the actual phenomenon (Groenewald, 2004).

The goals of the research design are achieved through the focus of a phenomenological inquiry, namely human experience. Phenomenology emphasises subjectivity over objectivity as it focuses on description and interpretation more than upon analysis and measurement of a phenomenon. Accordingly, the focal point of such research tends to include people’s feelings or meanings as well as their attitudes and beliefs. Thus phenomenology does not aim to explain causality but to describe and interpret how people perceive things, understand situations and interpret various occurrences (Denscombe, 2003). Phenomenology endeavours to elucidate the experience of situations that occur everyday. Such research methodology does not reduce the phenomenon into identifiable variables that are understood in a controlled
environment but rather seeks to accurately capture the phenomenon within the context that it occurs (Smith, 2003).

The advantages of a phenomenological study include its ability to provide authentic accounts of complex phenomena through a humanistic approach which emphasises the respect for research participants. Due to the in-depth nature of phenomenological research, it is also suitable for small-scale studies. However, phenomenological approaches are often criticised for lacking scientific rigour and not providing detailed analysis of the phenomena. Due to the tendency for such studies to be relatively small, the ability to generalise findings from phenomenological research is also questioned (Denscombe, 2003).

A transcendental approach was used to actualise the researcher’s goal of observing, understanding and reflecting the phenomenon as it is perceived by the participants (Miller & Salkind, 2002). As described by Husserl (1977), transcendental phenomenology is a science of possibilities which through the application of systematic efforts creates opportunities for the empirical sciences to explore actualities. This approach to social investigation differs from other qualitative research methods through its perspective and methodology pertaining to obtaining and analysing data. Central to this approach is the manner in which the researcher systematically engages without judgement thus allowing particular perceptions, feelings and thoughts to be evoked with reference to the experience. Transcendental phenomenology also emphasises the role of subjectivity and the discovery of the meaning within an experience (Moustakas, 1994).

Transcendental phenomenology incorporates the concepts of intentionality and intuition. Intention refers to the orientation of the mind to an object in that such an object exists within one’s mind through the intentional act of perceiving it and thus can be understood as the conscious experience of something. In addition, the intentionality is considered to have directedness in which a need is directed towards the object, thus making the act of
consciousness and the object within one’s conscious intentionally related. The importance of intentionality in social research is that it is what propels perception by creating conscious awareness of oneself and of the world as inseparable components. This can be understood in terms of the noema-noesis relationship, whereby the noema refers to the phenomenon as it is perceived and the noesis refers to how the phenomenon is experienced. The integration of the noematic and noetic forms the process through which intentionality creates meaning of experiences. In addition to intentionality is the concept of intuition which refers to the capacity of the mind to understand, affirm, doubt, deny, sense or imagine (Moustakas, 1994).

Phenomenology thus recognises intuition as an essential factor in describing that which enters an individual’s consciousness. Understanding of intention and intuition facilitate the researcher’s ability to describe and interpret the lived experience of cocaine dependency. The phenomenological approach does not prescribe specific methodology. Alternatively, the approach assimilates important processes as guidance to effectively investigate social phenomenon (Moustakas, 1994).

4.3. Major Processes in Phenomenological Research

Phenomenological research does not rely on sequential methodological steps but incorporates four major processes that allow the researcher to delve into the phenomenon without distorting the participants’ accounts. The four main processes of such research include; (1) epoche (2) phenomenological reduction, (3) imaginative variation, and (4) synthesis (Moustakas, 1994). A description of these processes is provided to clarify the nature and approach of the present study.
4.3.1. *Epoche*

Epoche refers to the suspension of the researcher’s prejudgements, biases and preconceived ideas. The basis of epoche is to ensure that the researcher does not invalidate the participants’ experiences, inhibit their expression or description of such experiences or disqualify the meaning attached to such experiences by imposing previously acquired knowledge. However, the principle of epoche does not intend for the researcher to deny or doubt the reality of the phenomena, but rather the scientific facts that are already known. By suspending such knowledge and judgements the researcher is equipped to derive new knowledge surrounding the phenomena. Thus epoche can also be described as the researcher’s stance to the phenomenon in which the participants and their descriptions are approached with openness. The advantage of epoche is that it allows the researcher to put aside anything that would colour or direct the experience. Setting aside these ideas, predispositions and judgements enables the researcher to embrace the experience so that new ideas, feelings, awareness and understandings can be acquired (Moustakas, 1994).

The challenge in achieving epoche is the sustained concentration and effort that is required of the researcher. In order to achieve a fresh perception and experience, the researcher must actively seek to remove all manipulating and predisposing influences. The ability to commit and maintain a state of being that is free from perceptions, preferences, judgements and feelings requires the patience and will of the researcher. Should any interfering thought or feeling enter the researcher’s conscious; all efforts must be made to eliminate it from consciousness to maintain an openness to the experience. The significance of epoche is that it prevents the researcher from tainting what the research participant is communicating so that the phenomena is perceived and understood in its true form. However, achieving epoche remains a difficult challenge to any researcher and thus must be integrated into the research through the intention and attitude of the researcher. Thus it serves to guide
the researcher’s behaviour, thoughts and feelings to facilitate the disclosure of the nature and essence of the phenomena (Moustakas, 1994).

4.3.2. Phenomenological Reduction

Epoche is utilised to allow the researcher to become aware of things as they appear. However, the researcher’s ability to allow the phenomena to be disclosed without inhibition and distortion does not prevent the results of the study to be tainted. Thus phenomenological reduction is used to ensure that appropriate textural language is used to accurately describe the experience and new knowledge derived from the participants. The focus of phenomenological reduction is the quality of the experiences which is used to achieve completion of the nature and meaning of the experience. The task requires that the researcher repeatedly views the experience to provide varying intensities of the descriptions. This task is achieved by reviewing the different angles of perception so that each angle can be used to provide a richer description of the experience. In terms of the present study this process incorporates the transcendental approach in which the meaning of experiences is disclosed. It is also phenomenological in nature as it transforms the focus of the study into phenomena (Moustakas, 1994).

The process of phenomenological reduction includes the use of attention and comprehension so that the lived experience of the participants becomes differentiated. The essential nature of the phenomena is obtained through perceiving, thinking, remembering, imagining and judging. Initially, the researcher uses bracketing, in which the focus of the study is placed into brackets which excludes other information that does not pertain to the phenomenon. The concept of horizon emphasises that each statement is initially of equal value. Once the researcher has identified as many statements as possible, they are reviewed so that repetitive and overlapping statements are deleted, leaving only true horizons. These
horizons are then clustered in themes which are later organised to provide a coherent textural
description of the phenomenon (Moustakas, 1994).

4.3.3. Imaginative Variation

Imaginative variation follows from phenomenological reduction. The goal of imaginative
variation is to uncover possible meanings from the themes by using imagination. This
imagination involves changing one’s frame of reference, viewing themes from different
polarities or reversing them so that different perspectives, roles and functions can emerge.
The aim of this process is to facilitate a structural description of the phenomenon which
provides insight into the fundamental or precipitating factors that account for what is being
experienced (Moustakas, 1994).

Imaginative variation is dependent on intuition as the means of integrating structural
factors into essences. It thus encourages the researcher to focus on pure possibilities to find
potential meaning. This process deviates from traditional perspectives that encourage the
development of facts or the use of measurement, by moving towards the meaning and essence
of the phenomena. To achieve this, the researcher reviews many possibilities and then
reflectively elucidates them to provide a detailed description of the phenomena. The steps of
imaginative variation include systematically creating as many varying structural meanings as
possible so that underlying themes or contexts that account for the phenomena can be
recognised. Once recognised, the researcher must consider universal structures that
precipitate the feelings and thoughts surrounding the phenomena. Finally, the researcher must
illustrate these structural themes to develop a structural description of the phenomenon
(Moustakas, 1994).
4.3.4. Synthesis

The fourth process in phenomenological research is the synthesis of meanings and essences. This synthesis involves the integration of essential textural and structural descriptions to create a unified description of the experience of the particular phenomenon. The process of synthesis is not achieved through the restatement of the participants’ experiences but provides a deeper description of how the phenomenon manifests. Thus this process is used to unravel the conditions or qualities through which the experience exists (Moustakas, 1994).

4.3.5. Application of Phenomenological Processes

The four phenomenological processes, epoche, phenomenological reduction, imaginative variation and synthesis can be applied to the present study in four steps. In the first step, the researcher reads the entire transcript of each interview to grasp the sense of each participant’s experience. The second step involves reading the transcriptions to uncover ‘meaning units’. During this step, the researcher brackets all information pertaining to the phenomenon and set asides that which is not related to the study. Once all meaning units have been identified, those which are repetitive or overlap are deleted, leaving only unique meaning units. The third step involves a review of all meaning units with the aim of expressing the psychological insight contained within them. The last step involves synthesising all discriminate meaning units to elucidate the participants’ experience of the phenomenon and thus provide a thicker description of their lived experiences (Smith, 2003). With an understanding of the phenomenological research process, an account of the methodology used in the present study will be given. This includes a review of data collection methods as well as the data processing and analysis of the present study.
4.4. Data Collection Methods

The collection of data was completed through the use of biographical data forms and semi-structured interviews. The personal data forms (Appendix 1) were used to obtain relevant background information regarding the participants as well as to determine their relevance to the study. This relevance was ascertained through questions regarding the participants use of cocaine, particularly specific behavioural criteria needed to meet the diagnosis of cocaine dependency.

The data collection process was continued through the use of individual, semi-structured interviews. Qualitative interviews emphasise the role of the researcher’s questions and the participants’ responses. The purpose of qualitative interviews is to derive interpretations as opposed to facts regarding the focus of the study. Thus qualitative interviews can be described as guided conversations in which the role of the interviewer is to use the interactive process to uncover the meaning of what is being communicated (Warren, 2001). Interviews are viewed as appropriate for research that requires detailed information regarding emotions and experiences from a small number of participants. In addition, interviews are suitable when investigating sensitive or personal issues. Semi-structured interviews have the advantage of allowing the researcher to address specific areas of interest or issues yet allows for flexibility during the interview (Denscombe, 2003). This flexibility is particularly valuable in the present study as it allows the participant to include and discuss other issues that can be used to expand the understanding of cocaine dependency.

Participants have a wealth of complex knowledge regarding the phenomenon under investigation, including their explicit and immediate assumptions that can be expressed spontaneously during a semi-structured interview. Thus semi-structured interviews can be used to reconstruct the subjective theory that participants possess. (Flick, 2006). The effectiveness of a semi-structured interview is dependent on the rapport that the researcher
establishes with the participant. This rapport was established by conducting the interviews in a neutral and comfortable environment and was established before the interviews commenced through general conversation between the researcher and the participant. This rapport was maintained during the interview by ensuring that the role of the researcher did not become prominent during the conversation (Willig, 2003).

Semi-structured interviews utilise a predetermined interview schedule or guide. Open-ended questions are used to facilitate the disclosure of knowledge by the participants who are viewed as experts on the subject of the study (De Vos, Strydom, Fouche & Delport, 2005). The interview guide for the present study (Appendix 2) was developed according to pertinent areas identified through a review of literature.

The interviews were recorded using an auditory recording machine and were later transcribed into text that could be used in the data analysis process. The use of recording devises ensures that data obtained through the interviews is accurately captured in the sense that such devises have no vested interest in the study and thus cannot distort the information obtained from the participants. However, the presence of a recording devise can impact on the interview as participants may become shy or inhibited by the devise (Denscombe, 2003). To overcome this disadvantage, the recording devise was only activated once the researcher was certain that the participants had reached an adequate level of comfort.

Once the interviews were completed, the data was transcribed verbatim into text that would later be used in the data analysis process. Following a preliminary analysis of the research data, participants were contacted telephonically to verify the information obtained from the interviews. The telephone discussion also provided the participants with the opportunity to confirm that interviews had been accurately transcribed as well as provide a forum to make certain changes or additions to the information they provided.
4.4.1. Setting

Two research participants were obtained through the use of email and one participant was obtained through the use of a referral. All three participants were contacted telephonically to participate in the individual, semi-structured interviews. The participants were contacted in advance so that a convenient time and suitable venue could be arranged for each interview. During this discussion participants were informed about the expected duration of the interviews so that other commitments would not be affected by their participation.

Each interview was conducted in the researcher’s office at the Nelson Mandela Metropolitan University. The venue was agreed upon by both the researcher and participant as the most convenient setting. In addition to this, using this particular venue allowed the researcher to eliminate variables that may have influenced the interview. One variable was the presence of other people that may have inhibited the participant and reduced the intensity of what the participant communicated. Other factors included external noise factors or disruptions as well as interruptions that may have been encountered in more public settings. Another advantage of the venue was that the seating arrangement could be organised to ensure that eye-contact was maintained during the interview and nonverbal cues were easily observed.

The recording machine was only activated once the researcher was certain that a comfortable level of sharing had been reached by the participants. Once activated, the recording devise was only switched off once the interview had been concluded. All interviews were conducted in English, the first language of the participants and the researcher. The total time of the interviews was 120 minutes, with an average interview time of 40 minutes. The total time for the follow-up phone calls was 30 minutes, with an average time of 10 minutes.
4.4.2. Research Procedure

The researcher approached various social networks informing these groups of people about the proposed study. An email was also forwarded to other individuals until potential participants for the study responded to the researcher. Once the potential participants had expressed interest in participating in the present study, the researcher contacted the potential participants to provide further information. A personal data form was used to obtain relevant background information and to ensure that participants were selected based on their relevance to the study. Individuals who qualified for participation in the study were selected based on behavioural criteria that indicated cocaine dependence.

The researcher contacted each participant to schedule an individual, semi-structured interview at a time and venue that was convenient for the participant. Prior to each interview, the researcher reiterated the purpose of the interviews in light of the goals of the study as well as the role of the participants. Opportunity was provided to each of the participants to ask any questions and to verify their role in the study. Following this, the researcher obtained consent from the participants to participate in the study.

Once the researcher had contracted with consenting participants, the researcher conducted the face-to-face, semi-structured interview with each participant. These interviews were audio-recorded and later the content from the interviews was transcribed by the researcher for analysis. Following a preliminary analysis of the data obtained through the interviews, each participant was contacted telephonically to verify the content of the interview. This telephonic discussion also provided the participants with an opportunity to make adaptations and additions to the information that they provided in the interview.

Following data verification, the information obtained through the interviews were simultaneously analysed by the researcher as well as an independent research psychologist with expertise in qualitative research methods. The verification of the data by an independent
research psychologist ensured the integrity of the results obtained from the researcher’s analysis. On completion of the analysis, the participants were provided with written feedback on the study’s findings. The feedback also provided an opportunity for each research participant to be contacted by the researcher during which they could reflect on their involvement in the study. In addition to this, the feedback provided the research with an opportunity to provide relevant referrals for psychological services to the participants had they deemed it to be necessary.

4.4.3. Participants and Sampling

Qualitative research design used nonprobability sampling. Nonprobability sampling focuses on the relevance of the sample in relation to the research as opposed to the degree of representation within the sample (Neuman, 2003). The researcher used a theoretical sample, in which participants were selected based on their theoretical relevance to the study (Seal, Gobo, Gubrium & Silverman, 2005). The size of the research sample was three participants and was determined by theoretical saturation. Theoretical saturation is achieved when no new categories or information within the categories emerged from the data obtained from the participants (De Vos et al., 2005). The researcher used a purposive sampling technique, in which participants were selected according to predetermined criteria using the most appropriate sampling methods (Neuman, 2003). This purposive sampling technique was primarily actualised through the use of email. An email was sent to a large number of people residing in the Nelson Mandela Metropole in the Eastern Cape Province. The email included a brief description of the study as well as the goals for the research and the procedure that would be followed. Recipients of the email were encouraged to forward the email to others and individuals who identified themselves as cocaine dependents were requested to reply to the researcher. When potential participants replied to the email, the researcher contacted them
to discuss the possibility of participating in the present study. During this discussion, further information regarding the aim of the study as well as the role of participants and research procedures was provided. Individuals willing to participate in the study were screened via the telephone to ensure their relevance to the study.

One participant was obtained through the use of a referral. Through interactions with the researcher, an individual identified a potential participant who was subsequently referred to the researcher. As with other participants, the researcher contacted this participant and provided information regarding the nature and purpose of the study telephonically.

Participants were selected based on their knowledge and experience regarding the phenomenon. This was achieved by ensuring that all participants met the criteria for Substance Dependence as defined by the DSM IV – TR (2000) (Appendix 3) and where cocaine was a preferred substance of use. This information was obtained through telephonic communication prior to the actual interviews. In addition to this, the researcher only selected adult participants that were 21 years of age or older, and thus were capable of legally volunteering and consenting to participate in the study.

4.5. Ethical Considerations

Research ethics provide the researcher with guidelines to establish a balance between values, the pursuit of knowledge and the rights of those involved in the research. Ethical considerations that have been identified as pertinent to the present research study include: (1) obtaining informed consent from the participants; (2) avoiding any form of deception of the participants; (3) ensuring that data collected during the interview does not become distorted; (4) maintaining confidentiality, anonymity, and privacy of all participants; (5) accurate dissemination of results; and (6) ensuring the competence of the researcher (Neuman, 2003). The process of ethical conduct in a research study initially occurs with ethical approval from
a research ethics committee. Such approval is often obtained through a proposal presented by the researcher which is then reviewed to ascertain if relevant ethical principles and procedures have been observed (Denscombe, 2002). A proposal for the present study was presented to the researcher’s university department and was later reviewed by an ethics committee. Approval for the study was then obtained from the Faculty of Research, Technology and Innovation Committee of the Nelson Mandela Metropolitan University prior to conducting the research study.

The researcher maintained integrity throughout the research process and took the necessary steps to prevent scientific misconduct. The researcher achieved this goal by remaining oriented in her professional role and ensuring that no aspects of the research were falsified (Neuman, 2003). Furthermore, a researcher must maintain such integrity through a personal commitment to honestly investigate and report all information obtained through the study. By ensuring that such investigations are not influenced by other considerations and accounts and only include that which was truthfully observed, the researcher can remain faithful to the study (Denscombe, 2002). The researcher remained dedicated to the accurate investigation of the phenomenon and took necessary steps to ensure that all information disclosed through the study was not falsified during the procedure.

Integrity was also maintained through the researcher’s efforts to avoid any form of deception during the study, including procedures used to obtain participants for the research. The email that was used to elicit potential participants provided an accurate summary of the nature of the study as well as the type of participants required for the study. Further clarification was provided through the telephonic discussion prior to the interviews to ensure that each participant was aware of the intended purpose of the research as well as their role in the study. Furthermore, any other possible deception was avoided through discussion prior to the interview during which participants were encouraged to ask questions or seek additional
clarification. Another important facet of ethical human research involves the dignity and rights of the participants. These two aspects are integrated into the participants’ consent to voluntarily participate in the study based on adequate information provided by the researcher. In addition to this, the dignity and rights of participants are respected by ensuring their confidentiality and anonymity in the study (Flick, 2006).

Non-maleficence is a significant ethical principle when conducting qualitative research and refers to the researcher’s efforts to avoid harming participants (Flick, 2006). To actualise this principle, the researcher must at all times be aware of any potential harm that the participants may experience, including physical, psychological, and legal harm (de Vos et al., 2005). The mere focus of the study, namely cocaine dependence, indicated that the researcher had to be aware of the potential for possible harm. The illegal nature of the participants’ drug use indicated that all efforts were made to ensure that their identity and use of substances was not made known and that no legal action was taken as a direct result of their participation in the study. The researcher did not anticipate any physical harm through participation in the study.

The researcher must also ensure that harm is avoided during the data collection process. When investigating sensitive issues in a qualitative study, the researcher must be aware of the impact that the questions posed during an interview may have on the participants (Flick, 2006). No potential psychological risks were identified by the researcher prior to conducting the interviews. However, during the interviews the researcher ensured that the discussion did not cause psychological discomfort or distress. This was achieved by observing nonverbal cues that indicated that the participant was experiencing increased levels of discomfort. When such nonverbal cues were observed, the researcher guided the conversation in such a manner to reduce and prevent this distress.
Linked to non-maleficence is the principle of beneficence which highlights an important goal for any research or study. The principle of beneficence ensures that research is conducted in such a manner that it allows for positive and identifiable benefit. To achieve this principle, the researcher must ensure that the study has added value and is not simply being conducted (Flick, 2006). In the present study, the principle of beneficence is observed in the relevance of the study in light of drug-related statistics and the need to identify key aspects of cocaine-dependency that can be incorporated into treatment and prevention programmes, specifically those in the Eastern Cape.

Ethical conduct in a research study can also be achieved through the principle of voluntary consent. Obtaining such consent in an ethical manner can be used to ensure that the dignity and rights of participants are maintained and that forms of deception are avoided (Flick, 2006; Neuman, 2003). A consent form (Appendix 4) was completed by each participant prior to the interviews and was preceded by a discussion surrounding pertinent aspects of the research as well as participation in the study. The consent form provided the written contractual agreement between the researcher and participants. Information contained in the contract was in accordance with guidelines for conducting ethical qualitative research and highlighted the (1) the aim of the study as well as details of the researcher; (2) research procedures; (3) potential risks from participation in the study; (4) the confidentiality of the participants; (5) access to the study’s findings and dissemination of results and; (6) confirmation regarding voluntary participation and the right to withdraw from the study (de Vos et al., 2005). Participants were encouraged to ask questions and request clarification prior to providing consent to ensure that all possible deception was avoided. In addition to this, the researcher must ensure that consent is obtained from competent individuals (Flick, 2006). The participants that were selected for the present study were all 21 years or older in age and displayed sufficient capacity to provide informed consent.
Privacy can be maintained by ensuring the anonymity of research participants through the use of pseudonyms and confidentiality of information provided by the participants (Neuman, 2003). Identifying personal information was only known to the researcher and the participants’ anonymity was ensured through the use of pseudonyms that were standardised for all participants and did not include any personal references. Further measures to ensure privacy and confidentiality involve the storage of the research data. Identifying information pertaining to the individual participants that could compromise their privacy and confidentiality should be securely stored by the researcher (Denscombe, 2002). All documentation collected by the researcher that contained personal information regarding the participants was securely stored in such a manner that there was restricted access to such documents. Electronic documentation that may have compromised the participants’ confidentiality was also protected through the use of passwords. In addition to this, an individual agreement was established with each participant regarding the process that would be followed when the researcher provided the written feedback to ensure that their involvement in the study remained anonymous and confidential.

4.6. Data Processing and Analysis

The data processing and analysis was conducted in accordance with the principles and guidelines of transcendental phenomenological research. Central to this approach are four phenomenological processes, namely: (1) epoche; (2) phenomenological reduction; (3) imaginative variation; and (4) the synthesis of meanings. Epoche refers to the researcher’s non-presumptuous and non-judgemental stance that allows for awareness during the research procedure (Willig, 2003). During data processing, the researcher set aside all previously acquired assumptions, judgements, ideas and knowledge so that the data obtained from the interviews could be viewed as fresh information that was not distorted by the researcher.
Phenomenological reduction forms the descriptive aspect of the research which focuses on textural qualities of the experience (Moustakas, 1994). Imaginative variation explores how the experience is possible by identifying structural components within the phenomenon. Synthesis of meaning involves the fusion of the textural and structural components to reveal the essence of the phenomenon (Willig, 2003). These processes were incorporated into the study through the use of content analysis procedures established by Tesch (1990) as well as Lincoln and Guba’s (1985) model of trustworthiness.

Tesch (1990) established eight steps in qualitative content analysis. Using this approach, the transcriptions from each interview were reviewed until meaning could be extracted and clustered into similar topics. The topics were then organised according to their importance and later abbreviated into simple codes. These codes were then applied to the three transcriptions to determine if new topics emerged. New topics were then subsequently coded until all possible topics had been identified. The topics were then categorised and these categories were then abbreviated. Data from the interviews was then compiled into each of the categories established by the researcher.

Lincoln and Guba (1985) identified four principles to ensure the trustworthiness of a qualitative study, namely, credibility, transferability, dependability, and conformability. Credibility in a qualitative study refers to the internal validity of the research. This principle is closely linked to the nature of transcendental phenomenological research in which the aim of the study is to accurately describe the phenomenon within the parameters and theoretical frameworks that it occurs (de Vos et al., 2005). The principle of credibility was achieved by providing an accurate and detailed description of the lived experience of cocaine dependents that was later verified by the research participants. In addition to this, the researcher used the information obtained from the participants to account for the dynamic complexities and variables pertaining to cocaine dependency.
Transferability addresses the issues surrounding generalisability, specifically within small-scale qualitative studies. The principle of transferability aims to ensure that research is conducted in accordance with acceptable concepts and models that are obtained from previously reviewed theoretical frameworks (de Vos et al., 2005). This principle was incorporated in the present study through the discussion of the theoretical parameters of the study, including the models and concepts used in the collection and analysis of data. Furthermore, data obtained from the participants was triangulated with theoretical frameworks that were previously identified.

The third principle in Lincoln and Guba’s (1985) model is dependability. Dependability refers to efforts by the researcher to explain any changes that are observed in the phenomenon (De Vos et al., 2005). This principle is associated with the phenomenological understanding that all experiences occur as part of the individual’s social construction of reality thus allowing the possibility of multiple realities. As a result of this perspective, the principle of dependability is integrated into qualitative studies to acknowledge changes in the social world that may make replication of the study difficult (Denscombe, 2003). The researcher attained dependability by accounting for any changes identified in the phenomenon as well as any possible changes in the design of the study that occurred as a result of enhanced understanding regarding the phenomenon. This principle was observed in changes made with the sampling procedure of the study. The researcher initially indicated in the proposal that snowball sampling would be used to obtain research participants. However, as the researcher became increasingly aware of the reluctance among cocaine dependents to provide referrals the researcher adapted the sampling technique to purposive sampling. The purposive sampling allowed the researcher to obtain relevant participants for the study using a method that proved more feasible.
The final principle in the model is conformability. Conformability is an adaptation of objectivity in a qualitative study. As qualitative research incorporates the dynamic and changing setting in which the phenomenon occurs, conformability is used to determine if the study could be confirmed by subsequent studies. This is achieved by determining whether data obtained through the research confirms general findings and leads to similar implications (De Vos et al., 2005). This principle was incorporated into the study by adhering to the phenomenological principle of epoche. The researcher achieved this by remaining neutral and objective throughout the research procedure thus ensuring that contamination did not occur during data collection and analysis. Furthermore, this principle was integrated through the use of theoretical saturation in the sampling procedure. The theoretical saturation ensured that data obtained through the present study confirmed the findings of previous studies that were highlighted through the review of literature.

4.7. Conclusion

Chapter Four reviewed the methodology of the present study and provided a discussion of the transcendental phenomenological approach to research. The chapter explored phenomenology as a science of possibilities and how this approach was used to unravel the lived experiences of cocaine dependents as complex phenomena. The chapter reviewed major phenomenological processes that were integrated into the research design, including epoche, phenomenological reduction, imaginative variation and synthesis. The description of data collection methods and research procedure highlighted how the researcher integrated the principles and an understanding of transcendental phenomenology with qualitative research techniques within the research design to explore cocaine addiction. Major ethical principles observed prior to conducting the research were identified. A discussion of the ethical considerations highlighted how they were implemented into the research design and
methodology. The review of data processing and analysis procedures provided insight into how acceptable and reliable models were incorporated into the research methodology. Implementing these models ensured that the results that are discussed in Chapter Five were obtained through methods that enhanced the trustworthiness of the research.
Chapter Five

Results and Discussion

5.1. Chapter Overview

A phenomenological study aims to describe the meaning or essence of a phenomenon. Through the use of a transcendental phenomenological approach the phenomena was observed, understood and reflected upon to create a clinical impression of cocaine addiction. Through the application of the four phenomenological processes discussed in the previous chapter, (1) epoche, (2) phenomenological reduction, (3) imaginative variation and (4) synthesis of meanings, an illustration of lived experience of cocaine dependents was revealed. In this chapter, the results of the present study as well as a discussion of these findings are provided.

5.2. Operationalisation of the Current Research Study

The participants of the study were selected according to predetermined criteria through the use of a biographical questionnaire. Following selection, each individual participated in a one-to-one semi-structured interview. The interviews were conducted in the researcher’s office which was viewed as the most convenient and private setting available for both the participants and the researcher. All three interviews were conducted in English with an average duration of 40 minutes. An interview guide (Appendix 2) consisted of nine questions that were used to initiate exploration into the core aspects of cocaine dependence. These questions provided guidance to the researcher but were not prescriptive as each participant was allowed to influence the flow of the dialogue. Furthermore, adherence to the principle of epoche allowed for flexibility within the interviews and provided the opportunity for new themes to emerge (Moustakas, 1994).
All interviews were recorded and later transcribed by the researcher. The process of transcription allowed the researcher to become absorbed in the data provided by each participant. Once all transcriptions had been completed, the researcher used Tesch’s (1990) eight steps to actualise the process of phenomenological reduction during data analysis. First the researcher read through each transcription a few times to develop a sense of the entire interview. The researcher then selected one transcription and while reading through it noted significant ideas or meanings that emerged. This step was repeated with the remaining two transcriptions. Through the review of main ideas that emerged during the reading, the researcher developed a list of themes that emerged from the data. The data was then reviewed and sub-themes were organized under the main themes previously identified. Through a review of the main themes and sub-themes, the researcher identified the most descriptive title for each theme. These categories were reviewed in an attempt to reduce the number of themes into fewer descriptive categories. Once the final descriptive themes were established, the researcher grouped all data pertaining to each theme into a structured ensemble. To ensure the accuracy of this procedure, the transcribed interviews were simultaneously analysed by an independent research psychologist with experience and expertise in qualitative research methodology. The results of each analysis were then compared to ensure that there was consistency between the main themes that emerged from each researcher’s analysis. Following a comparison and agreement of themes emerging from the data, the researcher contacted each participant telephonically to verify the themes that emerged from the data analysis.

Through the process of imaginative variation the themes were assembled into the six key areas that emerged from the data analysis. The six key areas included, (1) Description of use; (2) Reasons for use; (3) Euphoria; (4) Withdrawal; (5) Consequences of use; and (6) Treatment. Once the key areas had been established the main themes were arranged into the
most descriptive categories of meaning. Through a review of the transcriptions the data was then compiled into the main themes. This data was then reviewed and through imaginative variation organized into sub-themes to provide structural and textural contextualisation of the data. A biographical description of the participants provides further contextualisation of the cocaine dependents.

5.3. Biographical Description of the Participants

The three participants all met the criteria for cocaine dependence, each displaying five or more of the behavioural criteria needed to make the diagnosis. In terms of these diagnoses, one participant met the criteria required to specify the diagnosis with physical dependence and the other two met the criteria to be specified with non-physical dependence. It is worthwhile noting, that the participant that was specified ‘with physical dependence’ indicated a significantly longer duration of use (10 years) in comparison to the other two participants who indicated their duration of use as approximately three years.

Two participants reported poly drug abuse and highlighted cannabis and ecstasy as the most commonly abused drugs in addition to cocaine. The third participant reported only cocaine use. All three participants indicated primarily intranasal administration of cocaine. The participant with the longest duration of cocaine reported previous use of crack-cocaine that was not indicated by the other two participants. All three participants reported tobacco use and indicated heavy consumption of alcohol.

All three participants were male, aged between 23 and 34 years and had completed matric. The three participants indicated English as their first language and two were fluent in Afrikaans. Two participants indicated that they were currently employed and defined themselves as financially self-sufficient. The third participant is currently completing a full time tertiary degree and is financially dependent on his family. None of the participants are
married, and only one reported a current intimate relationship. Two of three participants are currently cohabiting with family or friends. None of the participants reported previous convictions or a criminal record.

One participant indicated a history of previous psychiatric disorders, including attention deficit/hyperactivity disorder and obsessive compulsive disorder. In addition, the participant reported current use of psychiatric medication, namely benzodiazepines. All three participants have received psychological treatment in the form of psychotherapy or rehabilitation programmes. In terms of this treatment, the participant with the longest duration reported two admissions to a rehabilitation centre for cocaine-related problems. The other two participants, who have previously received or are currently receiving psychological treatment, did not report their cocaine use as the primary reason for this intervention.

To provide textural and structural understanding of the lived experience of cocaine dependents, the results of the data analysis will be presented through the use of tables for each key area. Within these tables, the main themes and sub-themes of each key area will be highlighted. The discussion of results will be used to actualise the fourth process, through which there is synthesis of meaning. The phenomena will be explored through a psychological perspective in which common factors are highlighted to create a clinical impression of cocaine dependency. Table 1 provides an overview of the six key areas highlighted by the present study as well as the main themes that emerged within each area.

5.4. Results and Discussion

The data analysis produced six key areas in the lived experience of cocaine dependents. These included, (1) Description of use, (2) Reasons for use, (3) Euphoria, (4) Withdrawal, (5) Consequences of use, and (6) Treatment. Within these six key areas, the main themes that emerged provided structural understanding of the participants’ lived experiences. Further
analysis produced sub-themes that created textural understanding of the phenomena. The results of the present study will be discussed according to the themes that emerged within each key area. A clinical impression will be described through the integration of the structural and textural themes that emerged among the cocaine dependents.

Table 1: Key Areas of Cocaine Dependency

<table>
<thead>
<tr>
<th>Key Areas</th>
<th>Main Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of Use</td>
<td>Initial use</td>
</tr>
<tr>
<td></td>
<td>Cocaine abuse</td>
</tr>
<tr>
<td></td>
<td>Cocaine dependence</td>
</tr>
<tr>
<td></td>
<td>Use of other substances</td>
</tr>
<tr>
<td>Reasons for Use</td>
<td>Graduation</td>
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<tr>
<td></td>
<td>Social competence</td>
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<tr>
<td></td>
<td>Stimulation</td>
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<tr>
<td></td>
<td>Mental clarity</td>
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<tr>
<td></td>
<td>Escape</td>
</tr>
<tr>
<td>Euphoria</td>
<td>Self-assertion</td>
</tr>
<tr>
<td></td>
<td>Social integration</td>
</tr>
<tr>
<td></td>
<td>Physiological experiences</td>
</tr>
<tr>
<td>Withdrawal</td>
<td>Anticipation</td>
</tr>
<tr>
<td></td>
<td>Psychological experiences</td>
</tr>
<tr>
<td></td>
<td>Physiological experiences</td>
</tr>
<tr>
<td>Consequences of Use</td>
<td>Social effects</td>
</tr>
<tr>
<td></td>
<td>Psychological effects</td>
</tr>
<tr>
<td></td>
<td>Biological effects</td>
</tr>
<tr>
<td></td>
<td>Insight</td>
</tr>
<tr>
<td>Treatment</td>
<td>Abstinence</td>
</tr>
<tr>
<td></td>
<td>Rehabilitation</td>
</tr>
</tbody>
</table>
5.4.1. Description of Use

The first key area focuses on the participants’ descriptions of their cocaine use. Within this key area, four main themes merged that highlighted facets of the participants’ initial use of cocaine, their pattern of use since their initial use as well as a description of their current use. The discussions also revealed the dependents use of other substances including alcohol, illicit drugs and prescription medication. These themes are depicted in Table 2.

Table 2: Description of Use

<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Sub-Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Use</td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>Location</td>
</tr>
<tr>
<td></td>
<td>Reason for initial use</td>
</tr>
<tr>
<td>Cocaine abuse</td>
<td>Progression</td>
</tr>
<tr>
<td></td>
<td>Method of consumption</td>
</tr>
<tr>
<td>Cocaine dependence</td>
<td>Intervals</td>
</tr>
<tr>
<td></td>
<td>Location</td>
</tr>
<tr>
<td></td>
<td>Triggers</td>
</tr>
<tr>
<td></td>
<td>Denial</td>
</tr>
<tr>
<td>Other Substance Use</td>
<td>Alcohol</td>
</tr>
<tr>
<td></td>
<td>Illicit drugs</td>
</tr>
<tr>
<td></td>
<td>Prescription drugs*</td>
</tr>
</tbody>
</table>

* denotes unsaturated theme
5.4.1.1. Initial use.

The participants reported that they began using cocaine in their early twenties, falling within the age group identified as having the highest use of cocaine (Sadock & Sadock, 2003). As with previous research (Witteveen et al., 2007), the initial use occurred at social gatherings where the decision to use cocaine was predominantly influenced by their peers. This peer influence occurred in combination with sensation or novelty seeking, a personality trait associated with substance-related disorders (Zuckerman, 2005). The participants’ accounts of this were expressed as a form of experimentation as well as a sense of rebellion. Pre-existing psychiatric disorders are contributing factors in the development of substance related disorders (Sadock & Sadock, 2003), as highlighted by one participant who attributed his vulnerability to use cocaine to his attention deficit and anxiety disorders.

“Three years ago, I was at a party, it was there, so I thought I’d try it.”

“I started when I was 23 years old, it was at a rave club for the first time”

“I like to rebel you know, I like to just prove everyone wrong. I like to, I feel like I wanna…it’s like the blacks going to the bush, I go get fucked and take as many drugs as possible and come out of it and still be alive, still alright.”

5.4.1.2. Cocaine abuse.

The second theme that emerged focused on the participants’ abuse of cocaine following their initial use. The descriptions provided by the participants highlighted two sub-themes, namely progressive use of cocaine and their method of cocaine use. The progression of their cocaine use was characterized by repeated consumption at regular intervals. All participants
reported the development of a weekly binge pattern occurring within one month after the initial use that was strongly influenced by their financial circumstances. The cocaine was ingested nasally, and two participants reported that they occasionally mixed the cocaine powder with tobacco which they smoked. This method of use has been found to occur predominantly in higher socio-economic groups amongst individuals with higher levels of education (Shearer et al., 2007). Within the present study, all the participants have a minimum matric education. One participant has continued with tertiary education and two of the participants described themselves as financially self-sufficient.

“And for probably two months after that, it was every weekend…When I started using it, it was more of a money issue ‘cause it cost so much”

“I used to do it when I could afford it really, that was almost every weekend after I started using it”

“I snorted it. We used to roll it up in a cigarette, you know, coke smoke, but I never used to freebase or crack or anything like that.”

5.4.1.3. Cocaine dependence.

The third theme in this key area focused on the participant’s descriptions of their current cocaine dependence. The descriptions provided by the participants implied a transition from cocaine abuse to cocaine dependence. This transition was observed in changes in the frequency of cocaine use as well as preference to use cocaine in less public settings. In accordance with previous research findings (Beirut et al., 2008; Pilowsky et al., 2007), the
participants’ cocaine use was encouraged by drug-using social groups that normalized the individuals’ use of the substance.

The participants reported that they currently use cocaine on a monthly basis, mostly in private homes with a select few people. The participants identified three main triggers for using cocaine, namely social, financial and alcohol intoxication. Furthermore, the participant with the longest duration of cocaine use, highlighted an increasing tendency to use cocaine in isolation. In terms of duration of use, the average duration is 5 years and all three participants indicated that they had used cocaine for longer than they had expected they would.

In the biographical questionnaire and interviews, two participants indicated that their continued cocaine use did not impair their occupational and academic functioning. This perception provides further description of how the denial is manifested in their belief that their cocaine use does not negatively impact on their general level of functioning. This denial is observed within substance-related disorders, where the individual maintains the belief that control can be exerted over the use of substances (Sadock & Sadock, 2003). An unsaturated theme that emerged from the present study was in accordance with findings from a previous study (Shearer et al., 2007) that highlighted the continued use due to the lack of incarceration for using cocaine from an authority figure or group. This suggests that larger social repercussions are more influential in the individual’s perception of harmful drug use than personal consequences. This perception may also perpetuate the denial that the dependents exhibit.

“I think it was, at first it started out as a party drug, you would go out, have it, be able to enjoy the whole night. Then later on it just became a thing of you can just buy, you can just do it, just sit back and relax, you know, have a laugh, speak openly about things and that’s how I think it ended up.”
“Ja, well it cuts off your analytical brain, all the alcohol. I’d say that alcohol is the problem. I only ever do cocaine when I’m absolutely drunk out of my mind…Drinking is the gateway drug, people who say that marijuana is the gateway drug are retarded.”

“Like I’ve been using it for like ten years now and sometimes you don’t feel like being around people, and you just wanna sit and watch television.”

“Um, definitely for longer than I thought I would!”

“I don’t think its hard, but because I’ve been doing it for so many years and I haven’t really gotten myself into trouble besides getting…and I can control basically, I can’t control using it but I can control say after that, so say that after the cocaine I won’t use anymore.”

5.4.1.4. Other substances.

Research has indicated a high rate of poly-substance abuse among cocaine abusers (Beirut et al., 2008). Within the present sample, all the participants reported excessive alcohol consumption when they are under the influence of cocaine but prefer not to use other substances, such as cannabis and ecstasy, when consuming cocaine. One participant reported using prescription medication as a substitution for cocaine.

“I never liked them together, ‘cause I used to be heavy into cannabis as well, but everyone is in PE, and I know that cannabis speeds your heart rate up so you don’t want two things to mess with your heart…I don’t like the combination, the anxiety of marijuana doesn’t sit well with cocaine for me.”
“I take Ritalin as well as prescription stuff. If I run out of cocaine then I’ll just snort the Ritalin.”

The four themes that emerged within the first key area focused on the initiation of cocaine use as well as the development of the participants’ cocaine dependency following a transition from cocaine abuse. The results also highlighted a pertinent aspect of cocaine dependency, namely poly-substance abuse. These four themes provide a structural understanding of the participants’ current cocaine dependency. Understanding of these elements provides a foundation through which another key area can be explored, the participants’ reasons for using cocaine.

5.4.2. Reasons for Use

The results of the present study highlighted five main reasons for using cocaine which when combined created the second key area. The themes that emerged in this key area highlight the dependents’ beliefs regarding the functions of their cocaine use. These themes included graduation to more potent drugs, enhancing their social interactions by overcoming their sense of inadequacy and improved communication, stimulation, mental clarity and escape. These are depicted in Table 3.
Table 3: Reasons for Use

<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Sub-Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduation</td>
<td></td>
</tr>
<tr>
<td>Social competence</td>
<td>Facilitated communication</td>
</tr>
<tr>
<td></td>
<td>Reduced inhibitions</td>
</tr>
<tr>
<td>Stimulation</td>
<td>Energy</td>
</tr>
<tr>
<td></td>
<td>Arousal</td>
</tr>
<tr>
<td>Mental Clarity</td>
<td>Problem solving</td>
</tr>
<tr>
<td></td>
<td>Improved concentration</td>
</tr>
<tr>
<td>Escape</td>
<td>Emotions</td>
</tr>
<tr>
<td></td>
<td>Family</td>
</tr>
</tbody>
</table>

5.4.2.1. Graduation.

The results of the study and information contained in the biographical data form highlighted a graduation from less potent drugs to cocaine. This trend can be conceptualized as the result of the person’s sensation seeking nature through which progressive experimentation of different drugs occurs to intensify the intoxicated experience (Zuckerman, 2005). The participants’ use of cannabis and ecstasy was identified as a common theme prior to their initial use of cocaine. An interesting theme that emerged during one interview was the participant’s perception of this graduation, more specifically his belief that his shift to cocaine use was a regression to a less potent drug with fewer detrimental consequences. An unsaturated theme that emerged was the progression from cocaine to crack-cocaine and methyl amphetamine (tik) that was only evident with the participant with the longest duration of cocaine use. However, this theme continues to emphasize the progressive nature of substance-related disorders.
“Well as I said before my favourite choice is ecstasy, so I used that predominantly, but I was never really that big into cocaine. But after I stopped using ecstasy ‘cause of all the bad side effects, then I saw cocaine as a more benign drug, in terms of its effects on the brain and what not, so then I started using heavily.”

“I started out like doing pills and stuff, and then I graduated to cocaine and whatever else…I smoked crack cocaine for a while…its ten times more dangerous than cocaine.”

“Yeah, most of them are still doing it, some are on crystal meths now, some are using rocks and crack cocaine. I have used it twice, its very addictive and it keeps you awake for an extremely long time, makes you very paranoid.”

5.4.2.2. Social competence.

Literature indicates that cocaine improves social communication and reduces the cocaine user’s inhibitions (Coombs & Howatt, 2005; Julien, 1998; Levinthal, 2008). This experience was observed in the second theme that emerged within this key area, namely that the cocaine enhances their social competence. The heightened social experiences were characterized by their subjective experience of reduced inhibitions expressed as their ability to overcome an innate sense of inadequacy as well as their beliefs that cocaine facilitated their communication with others.

“Um, it means…to, uh, to get the best out of yourself in a social situation. So like a social crutch, like cigarettes you know, its just like cigarettes on steroids. Also for the cynical approach, you think you don’t really make real connections with people, so at least then if you don’t have anything real with people and your friends ultimately fall away, at least you
got to have a good time… So I was just very cynical about life, and also I had been dealing with being young and various mental illnesses since I was young, and uh, I like, I was cynical in that you needed a chemical crutch to interact with people.”

“Well it was more, it was like they would be high and you would just be sitting normal and I suppose they would be feeling wouldn’t be the same as what you were feeling, so you wouldn’t be able to interact with them on the same level.”

“With everything, any interaction with people, its funny how people are more drawn to you when you feel that way…I’ve always been socially inhibited and overly intellectualize things, so you just realize that you have to take all that potential and put it down.”

5.4.2.3. Stimulation.

The third theme that emerged highlighted the dependents inclination towards the powerful stimulant properties of the drug (Julien, 1998; NIDA, 2004). All the participants highlighted the stimulation that is produced by the drug as a prominent function of their cocaine use. This stimulation was described in terms of increased energy and arousal from a state of boredom. The appeal of the increased energy was attributed to the participants desire to stay awake during social gatherings. The perception of cocaine as a stimulant revealed an insipidness in the participants’ experiences for which cocaine provided relief and provoked a sense of excitement.

“It was more of something to keep me going through the night, to keep me awake.”
“I think mostly ‘cause out of boredom and as a means to relax sometimes...You don’t have anything to do, something to arouse my brain.”

“It wasn’t a craving to have cocaine, it was just a craving of more of, I know if I do take it I will be able to stay awake. And I’ll have energy, and that’s the main reason.”

5.4.2.4. Mental Clarity.

In accordance with the review of literature (Levinthal, 2008; Julien, 1998), the results of the present study highlighted the subjective experience of mental clarity as a prominent function of cocaine. The participants reported that cocaine heightened their cognitive abilities or mental performance which is experienced by enhanced concentration and more effective problem solving abilities. This perception that cocaine improves current intellectual abilities was superimposed on the belief or expectancy that the drug can be used to enhance self-efficacy. This perception of increased self-efficacy through the use of drugs has been associated with increased vulnerability for drug use in stressful situations (Fieldman et al., 1995).

“I think it made thinking about a situation or problem easier, without having my mind, you know, run away with thoughts. Instead of concentrating or thinking about one problem when I wasn’t using cocaine whereas another problem would pop in and I would have to think about both. Where as now, or when I did coke, it would be a matter of dissecting it better for myself.”

“Like anything that was weighing you down. When you take it you can out think the problem, and you feel on top of the problem.”
“I feel more intelligent.”

“…That you are above, that you are ahead of everything and you can figure everything out. I know that when I’m using it that it’s a load of bullshit actually, but I feel like I know what’s happening in my mind.”

5.4.2.5. Escape.

The development of substance-related disorders has been attributed to the psychosocial stress caused by home circumstances and social dynamics (Van Wormer & Davis, 2008). The duration of cocaine use has been specifically attributed to the degree and extent of stress that the individual experiences in his social environment (Karlsgodt et al., 2003). The results obtained in the present study revealed the participants’ perception that cocaine provides a means to escape from emotional or familial problems and thus to induce a state of relaxation. This escapism in conjunction with the desire for a heightened sense of self-efficacy previously discussed was largely expressed as behaviours to cope with life challenges.

“I suppose an escape as well, you know it was easy for me to use coke to try and forget about something or not think about something, or sort of, some emotions you push away, aside, and um, just go with the flow…um, you could push aside anger, sadness, confusion…The reason was, because of, uh, ja, it was more of anger, sadness and I thought using it would clear my mind and make me forget and you know.”

“Well I live in like a very cold environment, my dad works ‘til like 9 o’clock everyday you know, my siblings are all like ten years older than me, so I’m pretty isolated just by default, and there’s no real feeling. So I don’t feel like I’ve had a sentence spoken to my dad
properly, so I use drugs as a way to feel things you know? Just to feel alive almost, it’s almost a cliché, but it’s true.”

“Just everything, there’s a great deal of things that used to bother me, they still bother me, but normally if it was bothering me then I would use cocaine, like all the time. Now I will just buy one gram and use it and then I’ll feel like I don’t want to use it again.”

“When I’m on (cocaine) there’s no fear, there’s nothing. It’s all good.”

The participants’ accounts provided descriptions of the four main reasons for their cocaine use. These included enhancing their social competence, escapism, stimulation and obtaining mental clarity. The review of these themes illustrate how the participants’ perceived functions of cocaine can be described as their desire to better cope with challenges that they face. Another salient facet of the cocaine dependents’ lived experience is closely linked to their perceived function of cocaine and pertained to the immediate effects that occur during intoxication. These effects were clustered into the third key area, euphoria.

5.4.3. Euphoria

The third key area established in the present study focused on the immediate effects experienced by the dependents during intoxication. The main themes that emerged in this focus area included self-assertion, social integration and physiological experiences. The fusion of these subjective experiences produces the euphoria that is associated with the use of cocaine (Coombs & Howatt, 2005; Julien, 1998). The participant with the longest duration of cocaine use highlighted fewer immediate effects of cocaine and predominantly reflected on experiences that occurred during the first few years of his cocaine use. This observation
suggests that he is experiencing tolerance to cocaine, through which the same quantities of the drug produce a diminished effect (Sadock & Sadock, 2003). These themes are depicted in Table 4.

Table 4: Euphoria

<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Sub-Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-assertion</td>
<td>Increased self-confidence</td>
</tr>
<tr>
<td></td>
<td>Increased self-expression</td>
</tr>
<tr>
<td>Social integration</td>
<td>Intensified social connections</td>
</tr>
<tr>
<td></td>
<td>Sense of belonging</td>
</tr>
<tr>
<td>Physiological experiences</td>
<td>Heightened sensory experiences</td>
</tr>
<tr>
<td></td>
<td>Tachycardia</td>
</tr>
<tr>
<td></td>
<td>Increased energy</td>
</tr>
<tr>
<td></td>
<td>Psychomotor agitation (punding)*</td>
</tr>
<tr>
<td></td>
<td>Sexual arousal*</td>
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<tr>
<td></td>
<td>Decreased appetite*</td>
</tr>
<tr>
<td></td>
<td>Sobering</td>
</tr>
</tbody>
</table>

* denotes unsaturated theme

5.4.3.1. Self-assertion.

The first theme that emerged from the participants’ accounts of intoxication focused on their subjective experience of self-assertion. This self-assertion is a prominent effect of cocaine that is attributed to its strong psychostimulant properties (Kalivas, 2007). The self-assertion portrayed by the cocaine dependents encompassed a heightened self-esteem that allowed for increased self-expression. The enhanced self-confidence that cocaine produced
contrasted to the participants’ sense of inadequacy that they experienced when sober. Furthermore, it is common for cocaine users to experience a flight of ideas that encourages general talkativeness that may manifest as pressured and tangential speech (Julien, 1998). This immediate effect produced by cocaine was illustrated in the participants’ shared experience of increased expressiveness. The participants also described a more powerful state of being that the increased self assertion produced. This sense of empowerment is consistent with findings from a previous phenomenological study of cocaine dependence (Glauser, 1995).

“I’m just putting right God’s mistakes you know, like giving myself the chemical nudge I need.”

“It almost lets people be themselves, you know, to put their guard down”

“Ja, you feel self-conscious about yourself and just one line of coke will take that away.”

“Cause no one is really socially interacting with people on the piss, no one cares what you really have to say, so cocaine is such a great thing, ‘cause you fall in love with the sound of your own voice.”

“Well, I felt um, almost in the sense of being free, um, more expressive, I wouldn’t be bottled up in the sense of it.”
“I would say that its more like a self-confidence booster type thing, and you wouldn’t really identify yourself with anybody, you just feel that you are above everybody else…I would say it was more the confidence feeling taking over, being above everybody.”

“It definitely lowers your impulse control so you can say anything, like anything that comes into your head you just say. It’s actually incredible the amount of bullshit you can speak without realizing it. The next day you’re like I can’t believe I said that.”

“It like amplifies the ego, you know, you feel more competent at everything. Like even driving, you change gears, you drive like a fucking maniac and drive double the speed you would, and you feel invincible.”

“And you just feel this rush…Ja, it’s a sense of feeling strong, hey.”

“I like to feel that way, not necessarily be strong but you feel strong.”

5.4.3.2. Social integration.

The second theme that emerged in the description of the euphoria centred around the participants’ experience of social integration. A previous phenomenological study found that part of the dependents’ motivation to use cocaine stems from their lack of acknowledgement within their social environment (Glauser, 1995). This experience of social validation was described by the participants as a sense of belonging that is achieved through social acceptance characterized by intensified social connections. As with the previously discussed immediate effects, the participant with the longest duration of use expressed a weakened experience of social integration.
“Ja, because also you’re part of the group and everyone’s doing it, you feel part of it and you’re all super bad you know. Its validation in that sense.”

“Also a sense of belonging…Not belonging as I belong with these people, but like, we could, nobody would feel left out.”

“And when you’re like a new user you just want to go out and meet people and talk.”

5.4.3.3. Physiological experiences.

The physiological experiences produced by cocaine during intoxication vary among individuals depending on the frequency of use and quantities of substances used (Julien, 1998). The participants reported some commonly experienced physical changes while under the influence of cocaine. The dependents’ accounts of this physical rush included heightened sensory experiences that largely focused on tactile sensations and increased auditory perceptions. The descriptions of these tactile sensations indicated a pleasurable and desired experience, thus were not viewed as formication or a tactile hallucination that occurs with severe intoxication (Sadock & Sadock, 2003).

“And also it just makes everything sound good, especially music…It just enhances the euphoria associated, or the escape associated with music. ‘Cause it is all ultimately an escape.”

“Ok, when you snort and then you like get this feeling in your brain. It’s like a tingling sensation in your brain. It’s like a feather at the back of your head and after that you feel happy and relaxed.”
Psychomotor agitation or restlessness as well as an increased heart rate is commonly experienced during cocaine intoxication (Julien, 1998). The results of the study suggest that tachycardia is regularly experienced by the cocaine dependents but was not reported as part of the euphoric experience. In a telephonic discussion during the verification procedure, one participant reported that through curiosity he had used a heart rate monitor while intoxicated. He found his heart rate to be 180 bpm, which is significantly higher than the average range of 70 – 90 beats per minute (Jones & Jones, 1997).

An unsaturated theme that emerged from the interviews was psychomotor agitation. One participant reported that while intoxicated he engages in small, repetitive hand movements as a result of the excess energy he experiences. The repetitive nature and soothing effect of this psychomotor behaviour suggests that it could be a mild form of punding (Fasano et al., 2008). Increased energy is a prominent effect of intoxication and may be associated with the general sense of well-being that is experienced during intoxication (Julien, 1998).

“No its only small movements. But like I’m not conscious of it. People tell me like ‘stop that shit’ and I go ‘my bad’.”

“It’s an ego trip hey. You feel more, you know, now you feel dull and flat, on coke you feel like you can walk through a wall. It’s a nice feeling hey.”

Two unsaturated themes pertaining to the physiological experience of cocaine intoxication included sexual arousal and decreased appetite. These physiological experiences are commonly reported by cocaine users (Julien, 1998). Although the decreased appetite was only explicitly expressed by one participant, the other participants’ descriptions of physical fatigue and exhaustion after using cocaine may be attributed to this immediate effect of the
drug. Similarly, only one participant reported an increase in sexual arousal while under the influence of cocaine. However, all three participants indicated decreased sexual performance while intoxicated. This suggests that the desire for sexual intimacies was present but that the negative effects of the cocaine impaired their ability to engage in any sexual acts.

“You feel more sexually charged. Once again, if you take an SSRI it will just destroy your sex drive because of the inhibition of dopamine, so you pump that up (with cocaine) you feel more sexually perverse.”

One of the perceived functions of cocaine is the mental alertness and increased wakefulness that it produces. As previously mentioned, the participants all indicated the use of cocaine in combination with the alcohol. Through the stimulating properties of the drug, the participants reported a subjective experience of increased sobriety. The reports of the sobering properties of cocaine essentially became functional for the dependents in that they could continue consuming excessive quantities of alcohol while socializing or be capable of improved performance in tasks that would have been compromised by the effects of the alcohol.

“You can always rationalize it. Like you say to yourself well you can’t drive when you’re this pissed, so if you do some cocaine, you’ll feel more awake so its safer. You can always rationalize it hey.”

“No, just make you drink a hell of a lot more than you normally could.”
“Ja, and also because drinking was becoming a problem, because I couldn’t drink as much as before, and I would like have to pass out, so cocaine you can just go on for like forever. So it was a nice combination.”

The euphoria described by the participants’ accounts of the immediate effects of cocaine provides a textural understanding of the dependents’ experiences of cocaine use. This insight into their experiences highlights the desirability of the substance and illustrates the powerful psychostimulant properties of cocaine. However, these effects are relatively short-lived and once use is discontinued dramatic changes in the participants’ experiences occur. These experiences were assembled into the fourth key area, withdrawal.

5.4.4. Withdrawal

The initial effects of cocaine last for less than an hour. The users desire to reclaim the previously experienced euphoria results in repeated use of cocaine over a short period of time (Julien, 1998; Levintal, 2008). However, following cessation of use, the dependents experience a dramatic change in psychological and physiological experiences. This change is referred to as ‘the come down’ in which the immediate effects of the cocaine decrease in intensity and new experiences emerge. The fourth key area that emerged through the study focused on the withdrawal which was described by the participants as a largely negative experience occurring after intoxication. The theme that emerged from this key area included anticipation of the negative psychological and physiological experiences following intoxication. These themes are depicted in Table 5.
Table 5: Withdrawal

<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Sub-Themes</th>
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</thead>
<tbody>
<tr>
<td>Anticipation</td>
<td>Withdrawal</td>
</tr>
<tr>
<td></td>
<td>Self-medication</td>
</tr>
<tr>
<td>Psychological experiences</td>
<td>Anxiety</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
</tr>
<tr>
<td></td>
<td>Guilt</td>
</tr>
<tr>
<td>Physiological experiences</td>
<td>Fatigue</td>
</tr>
<tr>
<td></td>
<td>Cardiovascular irregularities</td>
</tr>
</tbody>
</table>

5.4.4.1. Anticipation.

Through repeated use of cocaine, the dependents have developed an acute awareness of the negative experiences that follow intoxication. This awareness was communicated through their anticipation of the come down. This anticipation leads to certain behaviours that could be perceived as attempts to avoid the negative psychological and physiological experiences, including self-medication and social withdrawal. Self–medication refers to the use of alcohol, other illicit substances and medication in response to the experiences of withdrawal. The social retreat highlights the impairment in the users’ social functioning that is common during withdrawal from the cocaine (Sadock & Sadock, 2003).

“But of course its short lived, it’s only like 45 minutes… I think it drops quite quickly, but you never allow it to drop off ’cause you’re always, I always time myself. I’m always hitting another one half an hour later just to bring myself back up. And the night’s over when you just can’t bring yourself back up anymore… It’s depleted, the neurochemistry in your brain just can’t physically do it.”
“I never wanna come down with people, ‘cause I like to be by myself, they say misery loves company, but I tend to withdraw…I don’t wanna see anyone when I’m like that.”

“Well your normal brain kicks in, the normal doubtful brain and you’re always like what did you think of me when I said this to you and whatever. Then immediately you withdraw and you’re not the same as you were.”

“I would always make sure that I had a benzo with me so that I could come down and sleep…If you don’t have benzos you’ll drink so much just to absolutely knock yourself out. But it’s such a strong stimulant and no amount of alcohol will knock you out.”

“Um, no, maybe, except if I want to like come down from that awake feeling I would drink a few beers.”

5.4.4.2. Psychological experiences.

The second theme that emerged from the results encompassed the psychological experiences of the withdrawal. Psychological symptoms that occur following intoxication are associated with anxiety and depression. Fear, agitation, paranoia and panic are associated with the anxiety while anhedonia, guilt and irritability are associated with the depression (Sadock & Sadock, 2003). The participants’ accounts of the come down highlighted acute experiences of the symptoms associated with both depression and anxiety. Furthermore, in a follow up telephonic discussion with the participant having the longest duration of use, he explained that the intensity of these psychological symptoms, especially the guilt, does not decrease with continued use.
“Eventually when you start coming down you get those paranoid feelings, the depressive feelings.”

“Just agitated, irritable, depression paranoid... Basically you think people are speaking about you, and you know what other people are thinking about you.”

“It’s like an absence of life. They say your soul is your animated characteristic and it completely destroys any animation that you have. So you just feel like death.”

“I feel guilty ‘cause you see, you always imagine your mother watching you when you do this sort of shit hey, and you feel guilty. It’s like an actual, I don’t know how to explain it.”

“I don’t even like speaking about it now ‘cause its making me anxious again and making me feel guilty.”

“It’s the combination of the come down. The biological basis, the guilt, psychological basis. The synergy creates depression. And obsessiveness, you know.”

“Depending on how much. Like if you have a gram it will last about two hours, then after that it’s down hill, you feel, I feel paranoid.”

“Well you, you look worse in the mirror, you sound less charming than you did when you were on coke.”
“And you have that sort of mental warfare, it is a war inside your head perpetually, which ultimately perpetuates the cocaine use and you need something to shut it off.”

5.4.4.3. Physiological experiences.

The third theme that emerged in this key area focused on the physiological experiences that occurred during withdrawal. The participants described a few physical changes following intoxication that have been identified as symptoms of withdrawal. These included disturbance in sleep patterns (American Psychiatric Association, 2000), as well as cardiac complications (Karch, 2007).

“Ja, and be able to sleep. And the only one that really works is the benzo. See even when I speak about it I get nervous, my heart flutters and shit, so it’s a terrible feeling.”

“Then I’ll try to sleep the first time and normally after the tenth attempt to sleep I’ll start panicking you know, my heart rate will still be beating and I’ll be like I need to go to the emergency room…I would be panicking and trying everything to come down, trying everything to keep my heart rate down.”

“I drink to sleep…No, sometimes I wish I could just close my eyes and sleep, but I know it’s not gonna happen, so I drink beers ‘til I sleep.”

The participants’ accounts of their withdrawal from cocaine highlights a striking contrast to the euphoria that they experience during intoxication. The participants’ desire to re-experience the euphoria of cocaine intoxication has resulted in continued use over an extended period of time. This repeated use of the substance has caused biopsychosocial
deterioration that is perceived as the consequences of their cocaine dependency. These consequences formed the fifth key area within the present study’s results.

5.4.5. Consequences of Use

The fifth key area to emerge focused on the consequences of cocaine dependency. Within this key area biological, psychological and social effects of long-term cocaine use were elicited. These themes focused on changes in the participants’ level of social functioning, psychological effects, biological effects as well as insight into these consequences. These themes correlate with the DSM IV – TR criteria for non-physiological cocaine dependence (American Psychiatric Association, 2000). These themes are depicted in Table 6.

Table 6: Consequences of Use

<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Sub-Themes</th>
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</thead>
<tbody>
<tr>
<td>Social effects</td>
<td>Social functioning</td>
</tr>
<tr>
<td></td>
<td>Occupational functioning*</td>
</tr>
<tr>
<td></td>
<td>Academic functioning*</td>
</tr>
<tr>
<td>Psychological effects</td>
<td>Decreased confidence</td>
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<tr>
<td></td>
<td>Decreased mental performance</td>
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<tr>
<td></td>
<td>Motivation</td>
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<td></td>
<td>Decreased emotional regulation</td>
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<tr>
<td>Biological effects</td>
<td>Recovering</td>
</tr>
<tr>
<td></td>
<td>Decreased sexual performance</td>
</tr>
<tr>
<td>Insight</td>
<td>Use despite awareness of consequence</td>
</tr>
<tr>
<td></td>
<td>Attempts at increased self-control</td>
</tr>
</tbody>
</table>

* denotes unsaturated theme
5.4.5.1. Social effects.

The first theme that emerged within the key area focused on the cocaine dependents’
descriptions of their current level of functioning within their social environment. Within this
theme, the level of functioning described by the participants was categorised into social,
occupational and academic functioning. According to the DSM IV – TR cocaine dependents
experience marked distress or impairment within these areas of their general functioning
(American Psychiatric Association, 2000).

The social functioning that was reported by the dependents included impaired social
relationships and the inability to fulfil social obligations or responsibilities. Linked to this
level of functioning was one participants’ perception of normal functioning due to lack of
incarceration. Impaired academic functioning was an unsaturated theme that emerged. This is
due to the fact that only one of the participants is completing his tertiary education as
opposed to the other participants who are actively employed. In terms of occupational
functioning, there were conflicting reports from the participants. One highlighted significant
occupational impairment while the second indicated none as a result of his cocaine use.

“Like I’d go big for three days or spend thousands, and then I’d stop for like a month, so
ja, I would do that. I would use rent money and stuff like that.”

“I’ve kinda had a falling out with a lot of those people.”

“I have before. I always say that I’ll try and save some, that’s always one of my
rationalizations. Say like I’ll do some now then I’ll save some ‘cause I have to study
tomorrow and it will get me right up tomorrow. But like 1% of the time that works ‘cause
you always finish it, you never leave it there.”
“Um, it affected my employment at one stage, but then I was like using quite extensively. I was spending like R1000 a day.”

“I used to work in a bank before. I used to work in the computer room and I had to be at work very early so sometimes I was like coming like an hour late ‘cause. But now I only use it over the weekend, on like a Friday so I’m not working on Saturday or Sunday. Sometimes I am and then I’ll just use like just one gram, then I’ll drink, then I’ll go to sleep and then I’ll go to work. But I’ll still be on time and all that so.”

“Yes, and it still does up until today. If I do use and you know she finds out then she obviously will be pissed off ‘cause I used.”

“I never really did it during the week so it never really had an impact on my work or anything like that, but I would say that it definitely caused major problems in my previous relationship.”

5.4.5.2. Psychological effects.

Psychological dysfunction or impairment is an effect of cocaine dependence that manifests in different behaviours (Kasarabada et al., 1998). A study found that cocaine dependents experience difficulties in emotional regulation and exhibit poor impulse control. This difficulty is more pronounced shortly after intoxication or during withdrawal (Fox et al., 2007) and results from decreased tolerance and defensiveness (Fieldman et al., 1995). This theme was identified in the participants’ descriptions of their tendency to anger quicker and their aggressive behaviour. The participants also reported a general decrease in their self-confidence over the period of their cocaine use, which is highlighted by a perpetuated belief
that cocaine can assist them in self-actualising (Glauser, 1995). In addition to this, a general decrease in motivation was observed among the cocaine dependents.

Neuropsychological impairments have been found to occur following extensive use of cocaine (Rosselli et al., 2001). This emerged as an unsaturated theme identified by the participant currently completing his tertiary education. Spotting was an unsaturated theme that emerged through discussions with the participant with the longest duration of cocaine use, and was specifically related to crack-cocaine. The behaviour he described was compulsive foraging, in which the addict searches for small quantities of the drug despite awareness that no drug will be found (Rosse et al., 1994).

“I was unmotivated, um, got angrier quicker afterwards.”

“That’s when you start using cocaine, afterwards when you get used to that whole feeling its, you don’t have the same confidence. When you’re a new user you have that whole self-confidence thing going for you. Afterwards, when you’ve used it a couple of times, plenty of times, you actually experience that you’re just chasing that feeling all the time. Suppose that’s why you get addicted to it, that’s why you try use so much because you’re trying to get that same feeling.”

“I mean that’s a cliché you know, ‘what did I do last night?’, and uh, you have people saying hello to you and you don’t even know who they are, like you’ve never met them before. You feel self-conscious about the fact of what you said and what not, but it didn’t matter ‘cause it felt so good.”

“I’d say that, ja, it’s dumbed me down slightly.”
“I used to be heavy aggressive and stuff...like fighting and getting into lots of fights and stuff...Yes, have lots of arguments with people.”

“Or you’ll worry about your brain you know, like you’re not gonna be able to complete work that you gotta do, you’re not gonna be able to memorise shit.”

“When you use crack-cocaine you sit looking around the whole time for maybe you spilt a small bit, it’s called spotting...You will keep looking.”

5.4.5.3. Biological effects.

The biological consequences of dependency refer to physiological changes or deterioration that occurs as a result of long-term cocaine use. The participants’ descriptions of physiological consequences focused predominantly on physical consequences experienced shortly after intoxication. As a result of this, their descriptions were centred around their experiences while recovering from cocaine as well as their decreased sexual performance. The descriptions highlighted a characteristic behaviour associated with dependency, in which the users spend increasing amounts of time in activities related to the drug such as recovering from its effects. Both of these factors are identified as consequences of cocaine use (Sadock & Sadock, 2003).

“I do lots of running and cycling and I couldn’t do that. I’m going to do a triathlon next year. I would say that it would affect my sexual life as well...It made me, I couldn’t get it up.”
“Um, yes it has. Um, sexually, um not being able to enjoy it the following day, um ja…Or under the influence as well, um I couldn’t get a hard on.”

“Um, laziness uh, I just wouldn’t be mentally there, I wouldn’t be, my body would be drained, I wouldn’t be able to do anything.”

“Ja, like the heart issue. Like I have major problems, from the day after my heart rate is doing like 130 the whole day and I can’t see.”

“Um, physical capacity like lung capacity would go down I’d say.”

5.4.5.4. Insight.

The participants all displayed an awareness of the negative consequences associated with their cocaine use, however the dependents have continued using the drug despite this awareness. The Biopsychosocial Progressive Symptom Model suggests that through repeated use of the drug the individual experiences loss of control and as they continue to experience deterioration they withdraw from their conscious awareness of the drug related problems (Gorski, 2003). This regression from their conscious awareness regarding the consequences of their cocaine use can be conceptualized as denial (Sadock & Sadock, 2003). This receding conscious awareness or denial of problems caused by the cocaine may provide an explanation for the relatively few consequences reported by the dependents.

“It’s very difficult to explain. I’ve thought about the consequences and I know there’s all the depressive and all those things, but uh, I don’t know, I just can’t not use it. I use it ‘cause it’s nice for when I’m using it at that moment.”
“There was always, in my eyes, a long enough break, at least a week… I don’t consider myself a heavy user. They say once you do it for the first few couple of times you’re ultimately addicted for the rest of your life and the cravings always there. But I always consider myself above that sort of law. Like I could just deal with it, you know?”

The participants’ descriptions of the biological, psychological and social effects of long-term cocaine use highlight the detrimental consequences of cocaine dependency. The participants also highlighted chronic use of cocaine despite their awareness of the negative implications of continued use. However, despite their continued use the participants’ indicated previous attempts to control their use of cocaine or abstain from it completely. These accounts were integrated into the last key area of the study that focused on treatment.

5.4.6. Treatment

The last key area that was identified referred to treatment. Within this key area abstinence and rehabilitation were highlighted as prominent themes. The desire to stop as well as unsuccessful attempts to stop form key criteria in the DSM IV – TR definition of cocaine dependence (American Psychiatric Association, 2000). Within this theme, the duration of the periods of abstinence varied among the participants. An unsaturated theme that emerged focused on formal rehabilitation. This theme emerged through discussions with the participant with the longest duration of use. These themes are depicted in Table 7.
Table 7: Treatment

<table>
<thead>
<tr>
<th>Main Themes</th>
<th>Sub-Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinence</td>
<td>Desire to stop</td>
</tr>
<tr>
<td></td>
<td>Periods of attempted abstinence</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>Duration of use prior to admission*</td>
</tr>
<tr>
<td></td>
<td>Success*</td>
</tr>
</tbody>
</table>

* denotes unsaturated theme

5.4.6.1. Abstinence.

The participants all indicated a desire to stop using cocaine that was characterized by attempts at increased self-control. This increased self-control was influenced by personal and interpersonal factors and actualized through the implementation of rules for use as well as through social isolation. The periods of abstinence varied significantly among the participants, from one month to tens months.

"Ja, temptation is always there. Like you know this weekend I was keen to use so I specifically went out of my way to get out of PE, so I went to St Francis Bay, and even when I got there, I saw friends of mine and they were all doing it. So it’s kinda hard to escape…But that’s why I say, I’ve always allowed myself to do these sorts of things, ‘cause I know they would never get the better of me. Then as soon as they do, then I stop."

"I would try for as long as possible to hold out you know, not answering my phone when people call and the longest I can go is like a month, four weeks and then I would, all it would take is that first beer boy, that first buzz and you just wanna increase it you know, that’s why
cocaine is for the more affluent and all those people I reckon, ‘cause they get bored and can afford it.”

“It became a thing of my ex-girlfriend wanted me to stop, so I stopped. And then you know you just sort of fall into it again and then it causes problems. And now it’s more of, uh, health, trying to live healthily, um you know exercising...Um ten months.”

5.4.6.2. Rehabilitation.

One of the participants reported seeking treatment for his cocaine use. What is interesting to note is the duration of use prior to admission for treatment was approximately five years. This period of use prior to seeking treatment is longer than the other participants’ entire duration of cocaine use. This suggests that treatment for cocaine dependency only occurs after a few years of cocaine use. Furthermore, the participant has experienced two forms of rehabilitation. His first admission was as an in-patient five years after his initial use of cocaine and was prompted by occupational and interpersonal problems. He maintained abstinence for a few months after discharge but relapsed as a result of socializing with cocaine-using friends. The second rehabilitation experience occurred approximately two years after the first admission and was prompted by familial and employment difficulties. However, the participant completed rehabilitation as an outpatient, supplemented with medication to reduce the cravings. He reported the out-patient treatment to be more effective than in-patient treatment in terms of increased duration of abstinence. Furthermore, he attributed his second relapse to his personal choice to use cocaine and not through peer influence.
“A couple of years, I almost lost my job, I lost my girlfriend, then I went to rehab. I went twice actually. The first time I didn’t’ expect myself to do very well. And when I went the second time I was an outpatient so I had to basically do it on my own…I was at a club with some friends and they were doing it so I said ok.”

“I stopped the second time when I realized I should go…I was, it was home, and everything wasn’t going right, and I didn’t have a job, and I got retrenched and I was just sitting at home and just wasting around, so I went to rehab…No, this time it was more of, it was more on my own that I started using again.”

The results of this study have been presented according to the six key areas that emerged during the data analysis. Within each of these key areas, the structural and textural themes of the dependents’ lived experiences were extracted through the process of imaginative variation. Through the discussion of the results the fourth principle of the phenomenological process was actualised through the synthesis of meanings pertaining to the lived experience of cocaine dependency.

The results of the present study illustrate the participants’ expectations of the drug’s effects as well as experiences during intoxication and withdrawal. The discussion of results suggests a dynamic role of alcohol in precipitating the use of cocaine as well as coping with the withdrawal from cocaine. Furthermore the results highlight the biopsychosocial deterioration as perceived by the cocaine dependents.

The discussion of the results emphasise the dependents’ use of cocaine to escape a state of subjective powerlessness and inadequacy. The participants indicated the persistent craving for a sense of empowerment despite awareness of the negative experiences during withdrawal and evident consequences of long-term cocaine use. Thus the results create a clinical
impression of cocaine dependency as the willingness to endure extended periods of physical and psychological discomfort as well as gradual deterioration for a brief moment of euphoria. The participants’ cocaine dependency reflects the perpetual desire to recapture the transient emancipation from a state of inadequacy and incompetence through cocaine intoxication.

5.5. Conclusion

The transcendental phenomenological approach of the present study revealed the complexity of dynamic interacting and influential factors that encompass the lived experience of cocaine dependency. The findings of this research provided a structural description of cocaine dependency expressed through the six key areas of the cocaine dependents’ experiences. Textural qualities of their experiences were assembled in the themes that emerged within these key areas. A clinical impression of cocaine dependency has been elicited through the integration of these structural and textural aspects of the phenomenon. The outcomes and implications of the present study will be discussed in Chapter Six.
Chapter Six
Summary, Implications and Outcomes

6.1. Chapter Overview

Chapter Six provides a summary of the present study and highlights the implications and outcomes of the research. The outcomes of the study focus on the results obtained from the research as well as the methodology used to actualize the researcher’s goals. The implications of the study reflect pertinent observations and understandings that emerged through this research process and how these could be incorporated into future research or implemented into current substance-related programmes.

6.2. Summary

The present study aimed to create a clinical impression of cocaine addiction through the description of the subjective meaning the participants attribute to cocaine and to seek common themes that emerge with regard to the lived experience of cocaine dependence. Research into this phenomenon is necessary in helping society comprehend the dynamic nature of cocaine addiction and provide assistance in developing mechanisms to prevent and manage its occurrence. However, research of such magnitude cannot be conducted without prior understanding of cocaine addiction. This study aimed to highlight the psychological facet of cocaine addiction which can be used to enhance the management and prevention of cocaine dependency.

A transcendental phenomenological approach was used to actualise the researcher’s goal of understanding and reflecting upon the phenomenon as it is perceived by the cocaine dependents. This approach emphasised the role of subjectivity and discovery of the meaning of experience by focusing on the meaning of the lived experience. As stated by Moustakas
Art of Addiction

(1994), such an approach highlights the relationship between the individual’s conscious awareness of what exists and what exists in reality. Understanding and insight into this awareness can thus be used to augment strategies in the prevention and treatment of cocaine dependence.

A theoretical sample was used through which the participants were selected based on their knowledge and experience with regards to the phenomenon through the use of biographical data forms. Following this, the face-to-face, semi-structured interviews with each participant were conducted and transcribed by the researcher. These transcriptions provided first person descriptions of the lived experience of cocaine dependency. The data analysis was conducted simultaneously by the researcher as well as an independent research psychologist with experience and expertise in qualitative research methodology using Tesch’s (1990) eight steps. Following this, the participants were contacted telephonically to verify the results of the data analysis. This contact also provided the participants the opportunity to reflect on their involvement in the study and to obtain relevant referrals if necessary. Through the discussion of results, the essence of cocaine dependency was described.

The approach and methodology of the present study allowed the researcher to implement the four phenomenological research processes, namely epoche, phenomenological reduction, imaginative variation and synthesis of meaning. Furthermore, the research process incorporated Lincoln and Guba’s (1985) four principles of trustworthiness, namely credibility, transferability, dependability, and conformability. Through this research process a clinical impression of the subjective experiences of cocaine dependents was described.
6.3. Outcomes with regard to Research Findings

The aim of a phenomenological study is to describe the essence of a phenomenon as it is perceived and experienced by the individual. The findings of such studies cannot be generalized but comparisons can be made between the experiences reported by the participants as well as their correspondence to existing literature. In terms of the present study, the results were found to be consistent with existing literature and previous research.

In summary, the present study explored the cocaine dependents use of cocaine through descriptions of their initial use, rapid progression to cocaine abuse and later the transition to cocaine dependency. The participants’ accounts provided insight into their perceived functions of cocaine use following a graduation from less potent drugs to more potent drugs. The continued use of cocaine and current dependence revealed their beliefs and expectancies that cocaine would allow for increased social competence, stimulation, mental clarity and escapism. Central to their lived experiences and repeated use of cocaine was the euphoria that they experienced while intoxicated. This euphoria was characterised by self-assertion, a sense of social integration and pleasurable physiological experiences. The fusion of these experiences was identified as a strong reinforcing aspect in their use of cocaine.

Similarly, the findings of the present study highlighted the negative aspects of cocaine dependency. Through the participants’ expressions a comprehensive description of the unfavourable effects of cocaine use was derived. This description focused on the contrasting experiences of withdrawal marked by anticipation as well as adverse psychological and physiological experiences. Similarly, the participants accounted for the biopsychosocial deterioration as a result of their dependence on cocaine. Their insight into the adverse consequences of cocaine use also highlighted themes that link to the treatment of the disorder, namely attempts at abstinence and rehabilitation.
A salient aspect of the findings within this study is the importance of psychological dependence on cocaine. The DSM IV – TR defines cocaine dependence according to observable behavioural criteria (American Psychiatric Association, 2000). However, the participants’ descriptions of their lived experience of cocaine dependency predominantly focus on the perceived psychological functions of cocaine as well as psychological experiences during intoxication. These findings suggest that although cocaine dependency can be conceptualised in terms of behavioural characteristics, the essence of cocaine addiction is contained in the psychological experiences of the drug. The significance of these findings with regards to cocaine dependence pertains to the implicit understanding that a psychological dependence develops before a physical dependence as suggested in the classification system of addiction by Howatt and Coombs (2005). However, the findings within the study suggest that treatment is only sought when symptoms of physical dependence develop.

6.4. Outcomes with regard to Research Methodology

The approach and methodology used was suitable and appropriate in actualizing the aims of this study. The phenomenological processes that were incorporated into the research design and application provided an adequate framework through which cocaine dependency could be explored, yet allowed the necessary fluidity for the meaning and subjective experience of the addiction to emerge.

The use of theoretical sampling ensured that the participants selected for the study had sufficient knowledge and experience to provide descriptive accounts of their dependency. Furthermore, the haphazard sampling procedure ensured that the selection of participants was not slanted towards certain populations groups and thus did not influence the profile of the participants. The importance of this pertains to the results of the study where consistency was
observed among the salient themes suggesting that the essence of cocaine dependency as described by this study is validated.

The use of semi-structured interviews provided guidance in the exploration of the lived experience of cocaine dependents. The location selected to conduct the interviews provided a private and confidential setting that facilitated the participants’ ability to freely express themselves. The use of a recording machine and the process of transcribing the interviews allowed the researcher to become immersed in the data and thus develop a deeper understanding of the lived experience of cocaine dependency.

The simultaneous data analysis by the researcher and an independent research psychologist proved valuable in ensuring the credibility of the study’s results. Furthermore, this process also provided an opportunity for the researcher to critically engage with an individual with a detached perspective. Through such discussions, the researcher was able to delve past the apparent meanings in the interviews and develop insight into the participants’ accounts. It is thus the present researcher’s contention that developing and engaging in a meaningful dialogue with the research psychologist facilitated a holistic understanding of the lived experience of the participants.

6.5. Implications

The main implication of this study refers to the psychological aspect of cocaine dependency, or the psychological addiction to the substance. The participants provided rich descriptions of the perceived psychological functions of cocaine as well as significant psychological experiences while under the influence of the substance. These themes are not accounted for in the conceptualization of cocaine dependency despite being described as the most influential determinants in the development of this disorder. This insight into the psychological addiction to cocaine highlights a more fundamental intrapersonal experience
amongst cocaine dependents which deviates from the behavioral characteristics used to conceptualize the disorder. Thus the results of this study emphasize the necessity to incorporate such psychological experiences into an understanding of cocaine dependency.

The findings of the present study suggest that certain pre-existing psychological characteristics make individuals vulnerable to using cocaine. These include decreased self-confidence and low self-efficacy which create a sense of disempowerment or perceived social inadequacy. The psychological effects of cocaine, namely self-assertion and heightened sense of social integration, provide an escape from this psychological state and eventually become a strong reinforcement in the use of cocaine. Further research into these aspects of cocaine dependency would be valuable in understanding the dynamics of this relationship. The awareness of these dynamics can be used to enhance the effectiveness of treatment programmes. However, more importantly this insight can be used to increase the efficacy of preventative strategies as statistics have indicated first time admissions form the largest percentage of all admissions for substance-related treatment (Pluddemann et al., 2007b). This suggests that a preventative approach would be more effective in addressing this substance-related problem.

Another implication of this study is the dependents’ perception of harmful cocaine use and ability to maintain an adequate level of functioning. The participants expressed a relative level of functioning despite their continued use of cocaine. This suggests that cocaine dependents can remain functional without treatment or incarceration for an extended period of time. The implication of this is that there is a period of time during which the psychological addiction to cocaine becomes entrenched. This may have significant consequences upon the effectiveness of existing treatment programmes as well as the individual’s ability to maintain abstinence. Furthermore, the results of the study highlighted an intricate relationship between the use of alcohol and cocaine dependency. Investigation
into this dynamic of substance-related disorders would be strongly recommended for future studies.

A limitation of the study was encountered due to the nature of the topic being investigated. The ability to obtain a larger sample was difficult as members of the drug-using population are reluctant to disclose their use of drugs. Furthermore, the participants used other substances including alcohol, illicit drugs and medication in addition to cocaine. Thus it cannot be determined if the experiences described by the participants can be attributed solely to their cocaine use. The participants also exhibited a varying degree of denial regarding their cocaine dependence and this may have influenced the accuracy of their accounts and thus detracted from the descriptions of the lived experience of their cocaine addiction. Another possible limitation pertains to the theoretical model that was used to conceptualise the participants’ dependency. The comprehensive nature of the biopsychosocial model could have detracted from the essence of the participants’ cocaine addiction through the inclusion of all aspects of their dependency. In light of the results, the use of a concise psychological model of addiction may have elicited a fundamental core of the participants’ addiction.

6.6. Conclusion

The exploration into the lived experience of cocaine dependents through this study has highlighted the relevance and necessity of such research. The phenomenological approach and methodology of the study have proven to be beneficial in developing insight into the psychological experiences of cocaine addiction and how this knowledge can be used to supplement understanding of the dynamics of cocaine dependency. The knowledge and understanding of the psychological aspect of cocaine addiction highlights the importance of continued investigation into the phenomenon which can be translated into more effective means of combating this rapidly progressing social problem.
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social%20Progressive%20Symptom%20Model


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associated with the initiation of cocaine and heroin among problem drug users:
28, 2008, from PsychInfo database.
September, 2008, from PsychInfo database.
University Press.
Appendix 1: Personal Data Form

Part 1:

1. First Language: ____________________________________________________________

2. Highest Education Qualification: _____________________________________________

3. Occupation/Employment: ____________________________________________________

4. Is cocaine your preferred drug? Yes / No (please circle)

5. Have you used cocaine for more than twelve months: Yes / No (please circle)

6. Would you characterise your cocaine use as:

<table>
<thead>
<tr>
<th>Daily</th>
<th>Weekly</th>
<th>Monthly</th>
</tr>
</thead>
</table>

Part 2:

Over the period of the last twelve months would you say:

7. You have needed to use increased amounts of cocaine to achieve the desired effect

   Yes   No

8. The same amount of cocaine seems to affect you less than before

   Yes   No

9. If you don’t have cocaine, you may substitute with what is available, e.g. alcohol, pills

   Yes   No
10. You often use more cocaine than you thought you would and over a longer period of time than you meant to.

[ ] Yes  [ ] No

11. If you don’t have cocaine you may become fatigued, irritable, anxious, agitated, aggressive, obsessive, experience craving, depression, bored, apathetic and have difficulty sleeping.

[ ] Yes  [ ] No

12. You would like to be able to cut down or control your cocaine use.

[ ] Yes  [ ] No

13. You have tried to cut down or control your cocaine use, but have been unsuccessful.

[ ] Yes  [ ] No

14. A lot of time is spent involved with cocaine, including obtained it, using it and recovering from its effects.

[ ] Yes  [ ] No

15. As a result of using cocaine, some social, occupational or recreational activities have been reduced or given up.

[ ] Yes  [ ] No

16. You use other substances in addition to cocaine

[ ] Yes  [ ] No
Appendix 2: Interview Guide

Guidelines for the Interview

The interview will focus on the following five areas:

1. Describing Use:
When did you start using cocaine? How?
Describe your pattern of use?

2. Perceived Function for the User:
Why do you use cocaine?
What does cocaine mean to you?

3. Effects of Cocaine:
Describe what you experience when under influence of cocaine?
Does cocaine influence your performance in any activities?

4. Perceived Consequences of Use:
What impact has cocaine had on your health, general functioning and lifestyle?
Do you experience increased suspicion, tension, boredom or apathy?

5. Treatment:
Have you ever tried giving up or cutting down?
Appendix 3: DSM IV–TR Criteria for Substance Dependence

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

1. Tolerance, as defined by either of the following:
   a. A need for markedly increased amounts of the substance to achieve intoxication or desired effect.
   b. Markedly diminished effect with continued use of the same amount of the substance.

2. Withdrawal.
   a. The characteristic withdrawal syndrome for the substance.
   b. The same (or closely related) substance is taken to relieve or avoid withdrawal symptoms.

3. The substance is often taken in larger amounts or over a longer period than was intended.

4. There is a persistent desire or unsuccessful efforts to cut down or control substance use.

5. A great deal of time is spent in activities necessary to obtain the substance (e.g. visiting multiple doctors or driving long distances), use of the substance (e.g., chain-smoking), or recover from its effects.

6. Important social, occupational, or recreational activities are given up or reduced because of substance use.

7. The substance used is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression)

(American Psychiatric Association, 2000)
**NELSON MANDELA METROPOLITAN UNIVERSITY**

**INFORMATION AND INFORMED CONSENT FORM**

<table>
<thead>
<tr>
<th>Title of the research project</th>
<th>The Art of Addiction: A Phenomenological Study of the Lived Experiences of Cocaine Dependents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal investigator</td>
<td>Sarah Plumb</td>
</tr>
<tr>
<td>Address</td>
<td>P.O. Box 77000 Department of Psychology Nelson Mandela Metropolitan University Port Elizabeth 6000</td>
</tr>
<tr>
<td>Postal Code</td>
<td></td>
</tr>
<tr>
<td>Contact telephone number</td>
<td>041 504-2330</td>
</tr>
</tbody>
</table>

**A. DECLARATION BY OR ON BEHALF OF PARTICIPANT**
(Person legally competent to give consent on behalf of the participant)

| I, the participant and the undersigned |  |
| I.D. number                           |  |
| Address (of participant)              |  |

A.1 I HEREBY CONFIRM AS FOLLOWS:

1. **Aim:** The investigators are studying the lived experience of cocaine dependents.
   
   The information will be used to create a clinical impression of cocaine addiction through the description of the participants’ experiences and to seek common factors that emerge between the participants experiences.

2. **A.1**

   1. I, the participant, was invited to participate in the above-mentioned research project that is being undertaken by Sarah Plumb of the Department of Psychology in the Faculty of Health Sciences of the Nelson Mandela Metropolitan University.
2.2 **Procedures:** I understand that I will be required to participate in an individual, face-to-face interview with the researcher. This interview will be audio-recorded. Following the interview, I will be contacted telephonically by the researcher to verify the information that I provided during the interview. Once the research has been completed, I will be provided with written feedback regarding the findings of the research.

2.3 **Risks:** No risks have been identified by the researcher.

2.4 **Confidentiality:** My identity will not be revealed in any discussion, description or scientific publications by the investigators.

2.5 **Access to findings:** Any new information/or benefit that develops during the course of the study will be shared through the written feedback provided by the researcher.

2.6 **Voluntary participation/refusal/discontinuation:**

<table>
<thead>
<tr>
<th>My participation is voluntary</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>My decision whether or not to participate will in no way affect my present or future care/employment/lifestyle</td>
<td>TRUE</td>
<td>FALSE</td>
</tr>
</tbody>
</table>

3. The information above was explained to me/the participant by

Sarah Plumb

in Afrikaans, English, Xhosa, Other

and I am in command of this language/it was satisfactorily translated to me by

I was given the opportunity to ask questions and all these questions were answered satisfactorily.

4. No pressure was exerted on me to consent to participation and I understand that I may withdraw at any stage without penalisation.

5. Participation in this study will not result in any additional cost to myself.

### A.2 I HEREBY VOLUNTARILY CONSENT TO PARTICIPATE IN THE ABOVE-MENTIONED PROJECT

Signed/confirmed at __________________________ on _________

Signature of witness

Signature or right thumb print of participant

Full name of witness
### B. STATEMENT BY OR ON BEHALF OF INVESTIGATOR(S)

| I,……………………………………………………………………………………………………………….…………declare that |
|---|---|
| - I have explained the information given in this document to | |
| and/or his/her representative | |
| - he/she was encouraged and given ample time to ask me any questions; | |
| - this conversation was conducted in | Afrikaans  | English  | Xhosa  | Other  |
| and no translator was used / this conversation was translated into | By | |
| Signed/confirmed at | |

<table>
<thead>
<tr>
<th>Signature of interviewer</th>
<th>Full name of witness</th>
</tr>
</thead>
</table>

| C. DECLARATION BY TRANSLATOR (When applicable) |
|---|---|
| I, I.D. number | |
| Qualifications and/or | |
| Current employment | |
| confirm that I | |
| - translated the contents of this document from English into | (indicate the relevant language) to the participant/the participant’s representative; | |
| - also translated the questions posed by | Sarah Plumb | |
| as well as the answers given by the investigator/representative; and | |
| - conveyed a factually correct version of what was related to me. | |
| Signed/confirmed at | |

I hereby declare that all information acquired by me for the purposes of this study will be kept confidential.

<table>
<thead>
<tr>
<th>Signature or right thumb print of translator</th>
<th>Signature of witness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full name of witness</td>
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