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FACULTY OF COMMUNITY AND HEALTH SCIENCES
MINI THESIS RESEARCH PROJECT

Title: Recovery after completion of inpatient substance abuse treatment program in the Western Cape: An exploratory study on self-efficacy differences.

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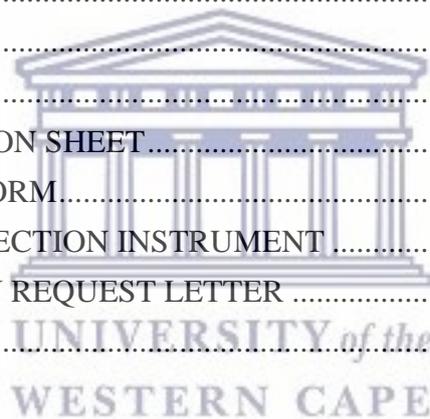
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Key Words: Self Efficacy, Substance Dependence, Treatment, Abstinence, Substance Abuse, Lapse, Rehabilitation, Aftercare, Sobriety, Recovery.

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The completion of this thesis is a testimony of God's greatest grace and abounding mercy. All praise and glory to my Lord and saviour.

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ABSTRACT

Recent increases in intellectual, social, infrastructural and economic resources available for the treatment of substance related mental disorders in the Western Cape reflects the national surge towards health promotion and eradication of the burden created by substance abuse. This large number of people who relapse and return to active substance abuse after receiving treatment obstruct this aim. This study aimed to determine the differences in self efficacy and assess for the risk for relapse during the first twelve months of recovery. Albert Bandura's social cognitive theory provided a suitable framework for the objectives of this study. A cross-sectional survey research design was implemented. Research participants were recruited from different aftercare groups across Western Cape using cluster sampling. The sample consisted of 105 English literate, consenting adult residents of Western Cape who completed an inpatient substance abuse rehabilitation program within twelve months spanning April 2014- April 2015. Data was collected from respondents using two instruments; a demographic information sheet, and an adapted alcohol abstinence self-efficacy scale (AASE). This instrument showed high validity and reliability during a pilot study conducted to ascertain its reliability in a South African sample. Ethics clearance and project registration was given by the Senate Research Committee of the University of the Western Cape. All ethics principles were adhered to and attention was paid particularly to ensuring confidentiality, informed consent, voluntary participation and the right to withdraw without risk of loss or negative consequence. The data was analysed using descriptive statistics, correlation matrices and regression analysis. The results indicated that self-efficacy was highest during the first days and weeks following discharge from a treatment facility. Respondents who remained gainfully employed during recovery reported higher overall self-efficacy and coped better with negative emotions, withdrawal, physical discomfort and urges to use. Respondents' perceived ability to cope with negative emotions, and resist withdrawal and urges to use again decreased as post-discharge time increased, with females reporting lower self-efficacy than males and respondents' age showing no significant effect on recovery outcomes. In conclusion, high abstinence self-efficacy has proven to be a predictor of sobriety. After care, interventions can focus on activities to strengthen abstinence self-efficacy levels. Employment stands out as a vital factor to consider in helping people maintain sobriety.

DECLARATION

I, Gashinje Emerita Malanguka, hereby declare that the thesis entitled, Recovery after completion of inpatient substance abuse treatment programme in the Western Cape: An exploratory study on self-efficacy differences, is my own work. It has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

G. E. Malanguka



November 2018

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CHAPTER ONE

Introduction

1.1 Background

An estimated 205 million people in the world use illicit drugs, including 25 million who suffer from illicit drug dependence (World Drug Report, 2008). This number showed significantly increased over the past six years; with 29 million people aged between 15 and 64 who presented with drug use disorders globally in 2014. An estimated 207,400 drug-related deaths occurred in 2014 alone (World Drug Report, 2016). These figures represent a major obstacle to economic, psychosocial and cultural growth for both developed and developing countries. Drug abuse and dependence rates worldwide cast a shadow on public health, socio-economic development, personal safety and community security.

Corrigal and Matzopolous (2013) identified substance abuse as one of the top three causes of death and disability in the South African Health Review of 2012/13. The health review also reported South Africa as a global leader in substance related harms such a substance related injuries and violent crimes such as homicides (Corrigal & Matzopolous, 2013). Substance related crimes accounted for 44% of all crimes committed between 2010 and 2012 and 40% in 2013 (Department of Community Safety, 2014).

Substance abuse in South Africa is prevalent. The South African Stress and Health study (SASH) identified that roughly 13% of the South African population suffers from Substance Use Disorders (SUD) (Herman, et al., 2009). Saban, et al. (2014) reported the following statistics for substance use in the general population: 27% of individuals smoke cigarettes, 39% drink alcohol, 11% smoke cannabis and 21% report the non-medical use of prescription drugs. Substance use is highest in the Western Cape compared to other South African provinces, with methamphetamine use being particularly problematic (Dada et al.,

2016). Of those with SUD, only 4.8% of men and 7.4% of women seek any kind of mental health treatment (Seedat et al., 2009).

With regards to substance use trends in South Africa, binge drinking has increased substantially in the last two decades (Peltzer & Ramlagan, 2009). The primary substance used by the majority of individuals who sought treatment was alcohol, followed by cannabis and methamphetamine ('tik') (Ramlagan, Peltzer, & Matseke, 2010). An increase in treatment admissions for methamphetamine users in Cape Town has been observed in recent times (Pluddemann, Myers, & Parry, 2008), with a third of patients seeking treatment in 2016 using methamphetamine as their primary substance (Dada et al., 2016). The Western Cape Government identified 55 substance use treatment services in Cape Town (Dada et al., 2017). Of these, 41% offer early intervention and awareness services, 29% offer community-based out-patient services, only 13% offer inpatient services and 17% aftercare services.

Recovery is the ultimate goal of substance abuse treatment, however follow-up, aftercare services are not well documented in South Africa, and little is known about the recovery cycle of patients utilizing these services (Tilley, 2017). Fisher and Roget (2009) defined Recovery as a "return to health or consciousness and regaining a sense of balance, control, or composure" (p.761). However, recovery from SUD is not a linear process and individuals are not "cured", but tend to go through a cycle of abstinence and substance use (Scott, Foss, & Dennis, 2005). Dodgen and Shea (2000) argued that aftercare services are essential to facilitate the process of recovery and relapse prevention. There is a notable lack of monitoring and follow-up of services provided to individuals who complete treatment (Tilley, 2017).

Kuria (2013) found that individualising post treatment interventions increased their effectiveness and contributed to helping patients avoid relapse. In order to individualise

interventions, personal factors associated with relapse need to be identified and incorporated into aftercare (McKay et al, 2004). Self-efficacy is an individual variable that has been implicated in treatment outcomes for alcohol and drug abuse (Abdollahi, Taghizadeh, Hamzehgardeshi & Bahramzad, 2014). Self-efficacy is a belief in one's capabilities to produce designated levels of performance that exercise influence over events that affect your life (Bandura, 1994). Various studies viewed self-efficacy as a possible predictor, mediator and moderator of abstinence and relapse after treatment (Trucco, Connery, Griffin & Greenfield, 2007; Kadden & Litt, 2011; Connor et al, 2011; Torrecillas et al, 2015). In other words, the ability to remain substance free after treatment.

1.2 Problem Statement

Research literature on substance abuse in the South African context currently report extensively on the burden of disease (incidence) and treatment or intervention strategies. For example, Peltzer, Ramlagan, Johnson & Phaswana- Mafuya (2010) identified that substance abuse in South Africa has received a substantial amount of attention and that most research efforts presented data-driven pictures of prevalence rates and the social consequences of alcohol and drug abuse. However, the body of local literature provides limited coverage of the following:

- a) Information on frequency of relapse and cyclical treatment (people who repeat the treatment program after using substances again);
- b) Knowledge on the specific individual factors that influence a person's ability to maintain abstinence from substances after receiving treatment;
- c) Knowledge on aftercare facilities, attendance rates and the prognostic effects.

This study attempted to address some of the above problems by examining the role of self-efficacy as an individual factor, and its impact on substance abuse treatment outcomes in recovery.

1.3 Rationale

The African continent is proactive in its approach to preventing, treating and eradicating substance abuse related harms. The main goal of the African Union's Plan of Action on Drug Control 2013-2017 was to promote overall health and wellbeing by reducing drug associated societal burdens such as, drug related crimes and drug trafficking (Bayever, 2016). At a national level, the South African government rolled out; The National Development Plan: Vision 2030. This strategic policy mandates all provinces to achieve the following goals among others; a) larger numbers of well-trained health professionals; b) increase the life expectancy to age 70; c) large reduction in prevalence of non-communicable diseases; and d) reduction in violent crimes and road accidents (National Planning Commission, 2011b). The eradication or amelioration of substance use disorders and related sequelae will contribute to these aims.

The National Drug Master Plan (2013-2017) highlighted the importance of aftercare and parallel methods that contribute to the amelioration of social burdens created by alcohol and drug abuse. These methods aid the reintegration of substance dependent individuals back into society (Central Drug Authority, 2013).

The Healthcare 2030; Road to Wellness plan published by the Western Cape Government (2014) put forward a person-centered approach to health care that underscores integrated services at all levels. This translated into an Annual Performance Plan for 2016-2017 that posited the need for strategies that will ensure retention and continued treatment to patients

diagnosed with chronic conditions like substance abuse (Western Cape Government Health, 2016).

In the same vein, The Draft Framework for Health Care in 2020, in the Western Cape, sought an outcomes based, inter sectoral approach in health care provision. Stricter monitoring and evaluation of current health practices and programs will expose deficits and inequities and thus create opportunities for learning and growth (Western Cape Government Health, 2011).

In 2018 the Western Cape Department of Social Development (DSD) allotted ZAR 104 million from its annual budget to fund the various organizations and projects that function in line with; a) early intervention; b) inpatient treatment c) community based treatment and aftercare services (South African Government, 2018).

The transformational policies and strategy documents articulate the commitment to engage with the challenge of substance abuse disorders and the related sequelae. The purpose of the present study was informed by the mandate and intention behind the above policy documents. It attempted to generate knowledge that contributes to the fund of knowledge about aftercare that in turn can inform intervention.

1.4 Aim of the Study

The primary aim of the study was to explore self-efficacy in a group of patients attending after care facilities in the first twelve months after treatment.

1.4.1 Objectives

The objectives of the study were to

- a) Determine the level of self-efficacy in a sample of patients in early recovery i.e. during the first twelve months after treatment.
- b) Examine associative relationships between demographic variables and self-efficacy in the first twelve months after treatment
- c) Assess for significant predictive relationships between sobriety, self-efficacy, gender, age and time post treatment during early recovery (the first twelve months after treatment).

1.5 Research Questions

- a) What is the level self-efficacy in a sample of patients in early recovery?
- b) Are there significant associations between demographic variables and self-efficacy in early recovery?
- c) Can self-efficacy, gender, age and time post treatment significantly predict sobriety?



1.6 Theoretical framework: Trans-Theoretical Stages of Change Model

The Trans-theoretical stages of change model was adopted as the framework for the present study. The Trans Theoretical Model (TTM) is named thus because it emerged from and is continuously driven by the integration of principles and processes across major theories of human behavioural change interventions. Prochaska and DiClemente (1982) pioneered the model after a series of studies involving comparative analysis between individual self- change processes and the change processes of people who received professional treatments. The results of these comparative analyses revealed that human behaviour changes through a series of phases. It also revealed significant differences in the internal processes at each stage (Prochaska & DiClemente, 1983). The trans-theoretical model combines the stages of change

model with a decisional balance across twelve problematic health behaviours including alcohol and drug abuse (Prochaska et al., 1994). The decisional balance rests on the choice between complete abstinence and moderated or controlled use (Fertonani-Affini, 2013).

1.5.1 Stages of Change

Trans-Theoretical Model (TTM) entails six stages of change namely 1) Pre-contemplation , 2) Contemplation, 3) Preparation, 4) Action , 5) Maintenance, and 6) Relapse (DiClemente & Prochaska, 1982). Below is a brief exposition of the stages in the TTM.

The Pre-contemplation stage involves denial; the individual is either ignorant or resistant to acknowledge that a certain behaviour set is unhealthy (Lenio, 2006). The contemplation stage covers a time period of about 1-6 months in which the person develops a sense of awareness of the problem (West, 2005). During this stage the drug abuser may look for ways to quit or be open to external stimuli pushing him or her towards change (Prochaska & DiClemente, 1983).

The Preparation stage is characterised by increased efforts to quit the substance, spanning 1 - 30 days. The individual may still occasionally engage in substance use but is making an effort to change (Lenio, 2006). The Action stage is a stable phase of abstinence and conscious efforts to minimize or completely avoid the drug/ alcohol for 6 months or more (Etter & Sutton, 2002). Preparation and action stages normally occur at intake and during inpatient treatment.

After treatment, the person enters the maintenance stage where abstinence/ moderation changes from a practiced behaviour to steady part of the person's life (Lenio, 2006). Relapse is the final stage that entails a partial or full return to substance abuse. At each of the six stages mental and physical behaviours of the individual are examined or explored (Prochaska & Velicer, 1997). The TTM also includes ten processes of change (Lee, Park & Kim, 2006).

1.5.2 Processes of Change in the Trans Theoretical Model

- a) **Consciousness raising:** The causes, cures and consequences of a given negative behaviour or coping mechanism are highlighted and raised into the awareness of the individual. This is usually achieved through media campaigns and information from concerned family and friends (Prochaska & DiClemente, 1983).
- b) **Dramatic relief:** An emotionally charged event that creates an anticipation of positive affect or relief if a step is taken to change or correct the behaviour (Prochaska, Redding & Evers, 2008). Personal testimonies by previous substance abusers are a good example of events that may trigger dramatic relief in someone who is afflicted by substance abuse/ dependence.
- c) **Self re-evaluation:** The individual takes time to assess their self-image, weighing up thoughts and feelings they have about what their life would be like with and without the risky behaviour (Lenio, 2006).
- d) **Environmental re-evaluation:** The person makes cognitive and emotional judgements of how his/ her behaviour affects other things and people in their immediate environment (Fallon & Hausenblas, 2004).
- e) **Self-liberation:** The individual builds the belief that they can change the unhealthy behaviour, and thereafter build commitment towards that belief.
- f) **Social liberation:** An increase in the availability of social opportunities for the person to address the unhealthy behaviour.
- g) **Counter- conditioning:** the healthy behaviour is learned and used to replace the previous negative coping pattern (Prochaska, Norcross, & DiClemente, 2013).
- h) **Stimulus control:** The active removal of visual, audio, oral and other sensory cues that may prompt a return to the risky behaviour.

- i) Contingency management: Positive and negative reinforcements can be used to maintain change and strengthen commitment to the new healthy behaviour (Lenio, 2006).
- j) Helping relationships: Positive social support provided through support group alliances, recovery buddy systems and therapeutic alliances with counsellors and other service providers (Prochaska, Norcross & DiClemente, 2013).

Figure 1.1 below provides a graphic illustration of the relationship between the stages and processes of change

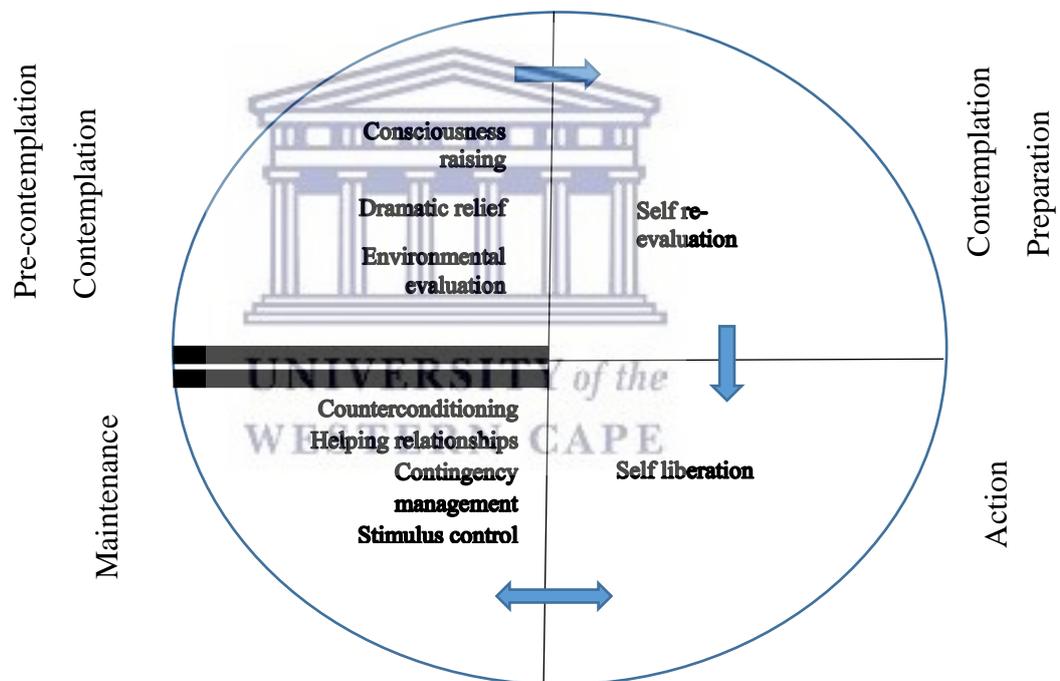


Figure 1.1: Stages and processes of change.

From the above figure it becomes evident that the first five stages constitute the full cycle of the recovery process. Relapse is represented by the double band between maintenance and precontemplation. Should the recovering addict relapse, the stage model of change starts over. Thus Relapse is not so much the final stage of the model but a

transitory stage that allows for a cyclical representation of recovery that is consistent with the general conceptualization used in clinical work and research (Kirshenbaum, Olsen & Bickel, 2009; Cunningham & McCambridge, 2012; Prochaska, Norcross & DiClemente, 2013). Each quadrant in the figure clearly indicate which change processes are operant.

1.5.3 Critical assumptions, criticisms and limitations underlying TTM.

Theorists over time have evaluated this stage of change theory and underscored critical assumptions that limit its use and levelled constructive criticism against it. Prochaska, Redding and Evers (2008) outline the following critical assumptions for service providers and researchers to bear in mind when using TTM. First, TTM does not presume to account for all variations and complexities of change in human behaviour. Second, behaviour change is seen as a fluid, non-concrete process (Etter & Sutton, 2002). The fluidity pertains to the reality that the constraints of this process can be estimated, but remain fully unique to the individual and their environmental circumstance (Sutton, 2001). Third, a majority of at-risk people are not prepared to change (Prochaska, Norcross, DiClemente, 2013). Thus the action-based behaviour change programme postulated by TTM may not adequately serve this subgroup. This group remains pre-contemplative and the behavioural change target would be to move them to contemplation (Lenio, 2006). Fourth, the stages of change proposed here are both stable and dynamic; meaning the gains at each stage are attainable and stable but prone to shift upwards or downwards as the person moves through the phases. This echoes chronic behavioural risk factors that appear stable, but are highly prone to shifts (Prochaska, Redding & Evers, 2008).

TTM is viewed by some theorists as overly simplistic and unable to account for the more complex processes involved in behaviour change (Sutton, 2001; West, 2005). TTM has been criticised for making arbitrary categories with no clear markers that can be empirically measured and standardised. It is said to use ambiguous constructs such as “Readiness to

change” that cannot be quantified (Etter & Sutton, 2002). It assumes that human decision making is a coherent, clear and possibly stable process. However, most decisions are spontaneous, sparked by randomly occurring stimuli in an individual’s life (De Nooijer et al,2005). TTM also neglects fundamental tenets of human behaviour like motivation and reinforcement. It does not speak to how rewards and punishments influence behaviour change (Garcia & Mann, 2003; West, 2005). The repeated reward and punishment cycles that created the substance use disorder are outside the conscious realm of daily decision making functions (Robinson & Berridge,2003).

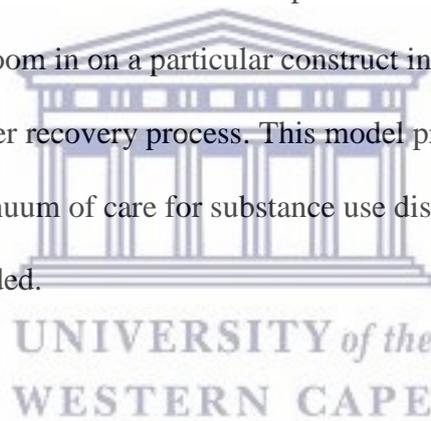
1.5.4 Suitability of the Model

McLellan et al. (2005) described recovery as a reduction in clinical symptoms of alcohol/drug abuse and increased social and occupational functioning. Cunningham and McCambridge (2012) also underscored that recovery is a dynamic and cyclical process. The stage model proposed in TTM captures the dynamic nature of recovery. The stage approach of the TTM allows research and clinical intervention to focus on particular stages within the overall recovery process (Prochaska & Vellicer, 1997). For example, the model allows one to isolate maintenance and to examine mental and physical behaviours of the individual that lead up to the elimination or reduction of the maladaptive behaviour (Prochaska & DiClemnte, 1983).

The present study was located within the maintenance stage. True to the TTM model, the present study isolated and examined self-efficacy in the context of maintenance of sobriety. Self-efficacy is a well-established psychological construct that was explored as a manifestation of mental processes articulated in the model. Research into maintenance examined the role of several personal factors such as self-efficacy in recovery. This type of research set out to determine if identified constructs play a protective role against relapse. For

example, self-efficacy has been empirically supported as an important construct in behavioural change *per se* (Abdollahi et al, 2014; Lee, Park & Kim, 2006; Sylvest, 2009; Kadam, Sinha, Nimkar, Matcheswalla & De Sousa, 2017; Swanepoel, Geyer & Crafford, 2015). Thus, there is merit in examining the role of self-efficacy in relapse prevention for substance abuse. Measuring self-efficacy during the maintenance stage will help to develop our understanding of the role it plays in relapse prevention and recovery.

The present study aimed to explore self-efficacy in a sample of early recovery drug addicts. This subgroup is engaging in counter- conditioning, stimulus control, contingency management and helping relationships as change processes. This subgroup thus corresponds to the maintenance stage in the TTM. Thus the TTM provided an appropriate framework that allowed the present study to zoom in on a particular construct in one stage while remaining cognizant that there is a broader recovery process. This model provided a comprehensive conceptualization of the continuum of care for substance use disorder within which the present study could be embedded.



1.7 Thesis Organization

This study has been divided into the following chapters. Chapter One introduced the reader to the study. This chapter attempted to orient the reader to the study and provided the overall research aims, objectives and research questions. Chapter Two provided a summation of the body of literature reporting on substance use, abuse, intervention and follow-up. This chapter identified the gaps in the body of literature and as such, formulated the research conundrum for the present study. Chapter Three reported on the methodological decisions made in the present study. Chapter Four presented the findings of the present study. Chapter Five is a discussion of the findings in the context of the body of literature and a conclusion of

the thesis report. This chapter also reports on the limitations of the study and recommendations for further study.



CHAPTER TWO

LITERATURE REVIEW

The objective of this literature review is to provide an academic rationale for the present study. The literature review is organized into two sections. The first section provides an overview of substance abuse, treatment and relapse. The second section provides an overview of self-efficacy.

Section One: Substance abuse

This section includes a(n) 1) overview substance abuse; 2) local burden of disease and drug of choice; 3) approaches to and efficacy of treatment; d) aftercare and relapse prevention; e) factors implicated in treatment and relapse prevention; and f) demographic factors implicated in treatment and relapse prevention including definitions, incidence and drugs of choice, access to drugs and sequelae of Substance Use.

2.1 Overview

Substance abuse is the illicit use of a controlled substance, and especially the pathological and driven, or compulsive use of a substance that leads to impaired social or occupational functioning (Psychiatric Dictionary, 1996). Substance abuse produces certain physical, psychological and social effects that are perceived as desirable or necessary by the user (Daley, 1987; Levinthal, 2005). Psychologically there is evidence of emotion regulation and dysregulation processes that take place when a substance is used. Emotional states such as, euphoria, confusion, tension or calmness induced by the substance regulate or oppose what the individual previously felt and thus form a pattern of use (Khantzian & Albanese, 2008). Negative psychological effects caused by substance abuse include a marked reduction in

sense of self-worth, reduction in self-care and a general loss of self-regulatory skills (Lubman, Cheetham & Yucel, 2015).

Research has shown over the last 30 years that physiological processes play a role in maintaining substance abuse/ dependence patterns (Daley, 1987; Dodes, 2002; Powledge, 1999; Leshner, 2003; Jacobus & Tapert, 2014). Biological aetiological theories on substance abuse reveal genetic predispositions and brain activation systems that sustain drug use (Koob & Volkow, 2010). The ingestion of drugs and alcohol alters the intake and re-uptake chemical balance of important brain chemicals such as dopamine (Basu & Basu, 2015). This forces the brain to change and re-adapt each time the drug is ingested (Volkow, 2010). Evidence from neuroimaging and neuropsychological studies suggest that the association between prolonged substance abuse with various deficits and impairments in brain functioning (Yucel & Lubman, 2007; Kooreman, 2017). This finding resonated with the medical model/ disease model that views substance abuse as an incurable physical illness that can only be controlled via moderation or abstinence (Doweiko, 2006; Leshner, 2003).

Drugs are referred to as psychoactive substances that means they alter the psychological and physiological functioning of a person's body (Grant et al, 2012). This includes changes in feelings, thoughts, actions and motoric responses (Department of Social Development, 2013). Each drug functions differently, but we can place them into 3 broad categories based on the overall effect the drug will have on the human body (Bayever, 2016).

The first category of drugs is referred to as depressants. Depressants slow down processes in the central nervous system (Grant, Levan, Wells, Li & Stoltenberg, 2012). Depressant induce sleep or making the person drowsy or calm. They include alcohol, pain killers, sleeping pills, heroin, morphine, and inhalants like glue and paint thinners (Minnaar, 2015).

The second category of drugs is referred to as stimulants. Stimulants include methamphetamines like Ecstasy, CAT (meth cathinone), and 'tik' (crystal methamphetamine). Tobacco, diet pills and cocaine/ crack are also activating drugs and therefore considered stimulants. These substances speed up the central nervous system processes leading to intense sensory awareness, feelings of excitement, energy and wellbeing (Bayever, 2016).

The third category of drugs is referred to as Hallucinogens/ Dissociative drugs. Hallucinogens include substances that alter the mind's capacity to process reality thus inducing unreal, 'dream-like' physical and mental experiences. For example, cannabis and LSD. Hallucinogens impact reality testing and result in pseudo and actual hallucinatory experiences (Volkow, 2010). This includes make auditory hallucinations (hearing), olfactory hallucinations (tasting and smelling), visual (seeing) and kinetic (feeling) things that are not actually there (American Psychiatric Association, 2013). Hallucinogenics contribute to people responding to internal stimuli rather than external, objective stimuli (Basu & Basu, 2015).

Van der Linde (2015) showed linkages between substance choice and certain behaviour sets. Methamphetamines, cocaine, crack and hybrid drugs (e.g. whoonga and nyaope) are associated with aggression and other premeditated violent acts. Heroin was linked to prostitution and other relational- based behavioural dysfunction. Cannabis was linked to risky experimental behaviours and petty crimes.

2.2 Local burden of Disease and Drug of choice

The incidence or burden of disease for substance use disorders in South Africa is presented below. The focus of this section is to provide a brief overview of the types of drugs used rather than an in-depth epidemiological account. Peltzer, Ramlagan, Johnson, & Phaswana- Mafuya (2010) reported on a review of studies on substance abuse in South Africa and ranked illegal substances in descending order of percentage reported use. The primary drugs were cannabis (16.9%), methamphetamine also known as 'tik' (12.8%), crack cocaine

(9.6%), heroin (9.2%) and prescription and over the counter drugs (2.6%). Alcohol was the most commonly abused legal psychoactive substance at that time. Two years later, Sorsdahl, Stein, Weich, Fourie, & Myers (2012) shared a different picture with methamphetamine being the most commonly abused drug in the Western Cape (30%), followed by alcohol (26%) and cannabis(26%). Methaqualone was the fourth highest rank in terms of reported use (9%). The above figures match the 2017 SACENDU report that stated that alcohol was still the primary substance abused in South Africa. Between January and June 2016, methamphetamine was the most commonly used illicit substance in the Western Cape at 32%, cannabis (28%), alcohol (22%), heroin and other opiates (11%) and Cocaine remained low at 1% (Dada et al, 2017).

The Global Status Report on Alcohol and Health published by the World Health Organisation shows data collected between 2001 and 2003 placed South Africa within the top 50 highest alcohol consumers out of 189 countries. Data showed that each person aged above age 15 consumed an approximate 7.81 litres of pure alcohol annually (World Health Organisation, 2004). This figure escalated to 9.5 litres per capita consumption when the second data set was collected between 2003- 2005. The Global Statistics on Addiction report of 2017 showed a slightly lower per capita alcohol consumption rate of 4.14 litres, which was at odds with the indicated 79% of adults who reported frequent heavy episodic drinking (Peacock et al, 2017).

The World Drug Report 2009 attributes widespread cannabis use to the fact that it is an easy and cheap to produce plant. Most cannabis abusers choose to grow it themselves for sale and consumption. About 28% of the treatment admissions in the Western Cape in 2016 were for cannabis use disorder. It is especially popular amongst youth who mix it with methaqualone to make a hybrid drug “white pipe” (Dada et al, 2017). South Africa produced an estimated 2500 metric tons of cannabis between 2008- 2009 alone (United Nations Office

on Drugs and Crime, 2009). African countries account for 25% of the world's supply of cannabis (Bayever, 2016). Sub Saharan Africa reported 19.8 million cases of cannabis use disorder in 2015-2016 and an estimated 3.8% of the global population aged between 15 and 64 is using cannabis (Peacock et al, 2017).

Methamphetamine-based synthetic illicit drugs are the primary substance abused in the Western Cape, affecting mostly coloured and black males between ages 15 and 35, 84% of whom stated that they use it almost every day (Dada et al, 2017). Methamphetamine based drugs are smuggled into the country and produced locally in well-hidden, clandestine laboratories (United Nations Office on Drugs and Crime, 2009). Despite police efforts to dismantle these drug labs, South Africa continues to produce high amounts of illegal crystal methamphetamine, meth cathinone and other methamphetamines. This is largely due to the vast amounts of legal ephedrine and pseudoephedrine that are imported (United Nations Office on Drugs and Crime, 2014).

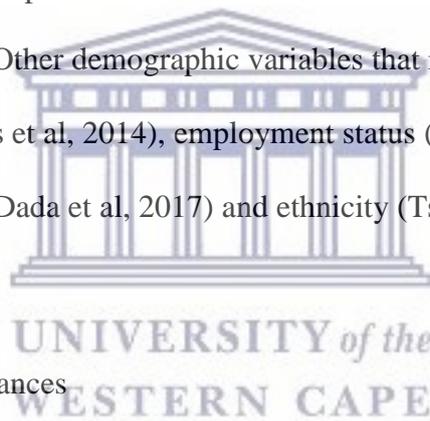
2.2.1 Demographic variables

Studies show gendered patterns to substance use (Sorsdahl et al, 2012; Bayever, 2016; Tshitangano & Tosin, 2016; Van Heerden, 2014). Males were found to have significantly higher drug and alcohol consumption rates than females. This trend remains consistent up to age 45 where the rate gap reduces, with males remaining slightly ahead (Parry et al., 2007; Dada et al, 2017). Gender differences in the choice of primary substance of abuse and response to treatment were also noted (Strebel, Shafer, Stacey & Shabalala, 2013). Males leaned more towards cannabis, methamphetamines, and alcohol, while females used more over-the-counter drugs, heroin and cocaine (Dada et al, 2017).

Age was identified as another demographic variable that was associated with substance choice and pattern of use. Youth reported that they started using drugs midway

through their adolescence around age 15 and the substance use pattern peaked in early adulthood with a steady decline in pre-retirement years (Lategan, du Preez & Pentz, 2017). Adolescents and young adults showed an affinity towards the use of cannabis and methamphetamines specifically (Dada et al, 2017). They also reported higher treatment attrition rates and relapse rates (Strebel et al, 2013).

Age and gender were found to interact with each other (SACENDU, 2014). For example, young women of childbearing age were at greater risks for substance use than male counterparts. This target group reportedly has lower literacy rates (high school completion), higher unemployment rates, low access to general health services and higher exposure to drugs and alcohol that in turn impact use and abuse of substances (Myers, Kline, Doherty, Carney & Wechsberg, 2011). Other demographic variables that influence substance abuse include education level (Myers et al, 2014), employment status (World Health Organization., 2014), geographical location (Dada et al, 2017) and ethnicity (Tshitangano & Tosin, 2016).



2.2.2 Access to substances

South Africa has been one of the many transfer points for amphetamine based synthetic drugs, cocaine and opioids from Europe to Asian drug markets for almost two decades (United Nations Office on Drugs and Crime, 2014). For this reason, South Africa has been identified as having ready drug transfer routes (Minnaar, 2015). The drug market in South Africa was estimated to be worth USD 413 million during 2014-2015 (Bayever, 2016). This would be the largest market for illegal drugs in Africa.

Due to the illegal nature of drug commerce, there is minimal concrete statistical data on the actual distribution channels and sales trends thus the GDP from this sector can only be estimated. South Africa serves as both a channel and a source for drugs and drug trafficking

into and out of the African continent (Van Heerden, 2014). This has been attributed mostly to the economic structure, responsive consumer markets, weak border controls and poor crime control policies of the country (Nel, 2003). In addition, technological advances have made drug trade and production swift; drugs are available for sale on the internet. There also several video tutorials that teach people how to manufacture drugs in their own homes using locally available ingredients (Bayever, 2016)

2.2.3 Sequelae of Substance use and abuse

Criminal or legal challenges were identified as a consequence of illicit drug use. For example, 60% of crimes committed in South Africa are drug related (Tshitangano & Tosin, 2016). During the financial year that ended in March 2012, a survey with sample size 13 347, including 149 police precincts and focus group interviews with various community stakeholders identified substance abuse as the highest of three modal crime categories (Department of Community Safety, 2014). Despite several measures implemented to curb drug supply and demand, the drug crime trends remain steep with 47% drug related crimes in 2010/2011, 44% in 2011/2012 and 40% in 2012/2013 (South African Police Service, 2015). The Department of Community Safety in the Western Cape Province released a report on Policing Needs and Priorities 2013/ 2014 (2014) showing unemployment and substance abuse as co-instigators for crimes, 79% of which are perpetrated by people youth aged 11-25 years (Department of Community Safety, 2014).

SACENDU (2014) identified that danger and risk to mothers and their children increase exponentially with active substance use and abuse. A wide array of foetal physiological, neurological and psychological deficits has been linked to maternal substance abuse (Madide et al., 2012; Jacobus & Tapert, 2014). Children with substance dependent

parents also present with various psychosocial, neurodevelopmental and neurocognitive impairments which hamper their overall functioning (Meintjes et al., 2010; Berman, O'Neill, Fears & Bartzokis, 2008).

Substance use disorders have a negative impact on academic and occupational functioning. Most people neglect their studies and fail to complete work tasks when they are under the influence of drugs and alcohol (Njeri & Ngesu, 2014). It is also common that frequent and sustained drug use leads to financial difficulty in the form of debt. Even cheaper substances like alcohol and cannabis form a substantial financial drain on the drug user's finances (Stea, 2013).

Substance abuse has been linked to non-communicable respiratory and cardiovascular diseases, it also increases the prevalence of communicable disease like Hepatitis C and HIV/AIDS via injected drug use and unsafe sexual practice in exchange for drugs (Bayever, 2016). In addition, it has a high comorbidity with other mental health disorders and has been implicated in the aetiology of illnesses such as schizophrenia, anxiety and depression (Grant et al, 2012; Basu & Basu, 2015). Substance abuse and dependency thus pervades temporal limits with devastating impacts on future generations through complex psycho-social-emotional and biological processes (White & Chaney, 2012).

2.3 Treatment of Substance Abuse

The term treatment broadly refers to activities, practices, objects combined to intervene and stop or reduce substance abuse behaviours (Sylvest, 2009). Treatment can include social, spiritual, psychological, bio-medical, pharmacological and religious inpatient interventions (Miller et al, 2015). Meyer (2005) recommended that treatment for substance abuse and dependence should be viewed as a holistic, broad and on-going process that entails everything from detoxification and motivation to seek treatment, the actual residential or outpatient program and aftercare and continued guidance to maintain treatment gains and

goals. Colker, Steisel and Whitney (2004) recommended a continuum of care model that delineates four interdependent stages of treatment namely; identification, assessment, treatment and recovery management. This care model goes beyond harm reduction and abstinence and assesses the individual's ability to obtain a steady job, acquire housing and skills training and other social assets that minimize chances of relapse.

The terms treatment and rehabilitation are used interchangeably in reference to the use of physical medication in conjunction with psychosocial adjustment and vocational training in an attempt to achieve maximal function and adjustment, and to prepare the patient physically, mentally, socially and vocationally for the fullest possible life comparable with his/ her abilities and disabilities (Psychiatric Dictionary, 1996). Treatment services can be provided at all levels of intervention.

2.3.1 Levels of intervention: There are three levels of intervention identified in the Health care system namely, Primary, Secondary and Tertiary (Department of Social Development, 2013).

Primary intervention: Primary intervention focuses on reducing exposure to and initiation of substance dependent behaviour (NIAAA, 2005). Primary interventions are offered at the community level and are usually out-patient (NIAAA, 2005). The majority of substance use treatment, as well as evidence for treatment is provided in community-settings by lay-counsellors and nurses in primary health care facilities (Kaminer, Owen, & Schwartz, 2018). The interventions provided at this level are typically short in duration, ranging from brief 1-2 session interventions (Wechsberg, et al., 2008) to 16 week programmes (Gouse et al., 2016;). Long programs are substantially more difficult for low income individuals to attend due to competing priorities including financial survival (Myers, Louw, & Pasche, 2010). Out-patient services generally use a combination of information sharing, motivation,

and behavioral counselling techniques (Kaminer, Owen & Schwartz, 2018). Of those who utilize outpatient services in Cape Town, more than half dropout before completion, while 70% of patients who complete treatment are abstinent at exit (Myers, Williams, Govender, Manderscheid & Koch, 2018). This means that only around a third of patients who begin treatment are leaving drug-free.

Secondary interventions: Secondary intervention is used interchangeably with early detection. Secondary interventions are in-patient rehabilitation services (Myers et al., 2018). It tries to limit progression in to full-on dependence by identifying at risk individuals and intervening. Inpatient treatment involves the provision of supervised, structured, around the clock care in the treatment of SUD (Fisher & Roget, 2009). Compared to outpatient services, dropout is much lower for residential programs, at only 6% (Myers et al., 2018). While the degree of care and services offered at individual inpatient facilities will differ, it is assumed that patients with severe addictions will be admitted to these facilities. However, only one of the five inpatient treatment facilities included in the Service Quality Measures (SQM) (Myers et al., 2018) offered detoxification services. The number of individuals who are admitted to this level of care is substantially lower than primary/outpatient care, with a mere quarter of individuals treated for SUD in Cape Town 2016 in residential treatment (Dada, et al., 2017).

Residential treatment is perceived negatively by individuals in Cape Town, as current drug users have described these facilities as restricting and prison-like (Meade, et al., 2015). This stigma towards inpatient care may be preventing individuals with SUD from making use of these services. There is also a perception that residential care is pointless, and as soon as the individual is discharged and sent home they will relapse. Substance users have indicated that inpatient treatment is particularly hopeless when their social environment remains unchanged when they are discharged, and that there is a strong need for assisted integration back into the community (Myser, Carney, & Wechsberg, 2016).

Tertiary interventions: Tertiary prevention forms part of treatment with the main aim being the prevention of escalated physiological and psychological symptoms (NIAAA, 2005). Tertiary level interventions refer to institutionalised care, where the patient is often treated for comorbid substance use and other mental illness concurrently (Sylvest, 2009). Information regarding the treatment of this nature is scarce in South Africa. A large unmet need for treatment in which addresses both psychological and substance abuse problems concurrently has been identified in South Africa (Myers & Fakier, 2009; Watt, Myers, Towe, & Meade, 2015).

Prevalence rates of individuals with co-occurring mental illness among individuals who access SUD treatment are currently unknown. However, evidence of comorbidity exists among both those who access psychiatric care and those who are in SUD treatment. For example, a study by Welch and Pienaar (2009) reported that 51% of inpatient psychiatric patients have comorbid substance abuse or dependence. Furthermore, these authors also noted the lack of documented SUD interventions implemented during psychiatric care. Among individuals in inpatient SUD treatment, a study by Saban et al (2014) reported that 96% of patients had comorbid psychiatric disorders, the majority of which (63%) had more than one current psychiatric disorder. Similar findings in methamphetamine users who were not receiving treatment, with roughly half of users who were interviewed reporting psychological problems and distress (Watt, Myers, Towe, & Meade, 2015).

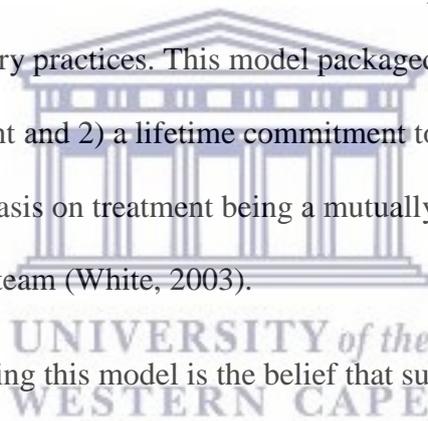
2.4 Treatment Types

Discussed below are a few of the many different treatment types available in the Western Cape.

2.4.1 Detoxification: In most residential settings detoxification is the first step in treatment. It is carried out to remove active toxins/ substances from the patient's body. Detoxification procedures and duration vary depending on the policies of the treatment centre,

patient's health history, substance abuse history and the substances of abuse (United States Department of Health and Human Services, 1999).

Chemical dependency units are frequently part of or linked to formal medical care such as, community clinics and hospitals. These units have medical staff and offer detoxification and medical treatment for substance abuse. Most chemical dependency units offer brief 3-6 week treatment programs and utilise the Minnesota model approach (Jeewa & Kasiram, 2008). Chemical Dependency Units use the Minnesota treatment model which is frequently referred to as an abstinence based model. It was initially developed at the Wilmar hospital and Hazelden Treatment centre in 1949 in Minnesota, United States of America (Spicer, 1993). It was the first documented and successful attempt to combine medical treatments with 12-step recovery practices. This model packaged treatment in two phases; 1) 1 month of residential treatment and 2) a lifetime commitment to 12-step practices and traditions. There is a big emphasis on treatment being a mutually supportive experience offered by a multidisciplinary team (White, 2003).

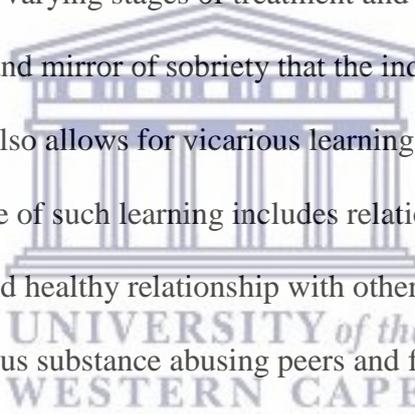


The core principle driving this model is the belief that substance dependence is not only a lifestyle choice, but also a lifelong mental, emotional, social and physical condition (Cunningham & McCambridge, 2012). Gossop et al. (2008) conducted a longitudinal study that measured and compared the abstinence rates of 142 patients in residential care. The cohort was divided into; a) patients who received inpatient treatment without AA/NA attendance and; b) patients who attended AA/NA in addition to their inpatient treatment. Results at one year and five-year follow-up points respectively showed higher abstinence rates among patients who had received treatment and attended AA/NA concurrently. At one year follow up more than 50 % of the abstinent group were still following 12 step traditions and meetings. Some of the criticism levelled against the Minnesota Model includes the brief

duration of acute inpatient treatment and the rather inflexible focus on AA/NA philosophies and traditions (McKay & Hiller-Sturmhoffel, 2011).

2.4.2 Therapeutic communities (TC). TCs have been identified as being an essential part of the continuum care model. Therapeutic communities embody both treatment and aftercare processes. They are ideal for substance dependent people who need safe environments that foster abstinence, deter criminal behaviour and provide platforms for positive growth through psycho- education and behaviour management (Therapeutic Communities of America, 1999).

The therapeutic community model enforces recovery through mutualism. All the people at the community are at varying stages of treatment and recovery. This community of people thus becomes the wall and mirror of sobriety that the individual needs to stay clean. Living within the community also allows for vicarious learning of acceptable substance related behaviours. An example of such learning includes relational skills, that is, has to initiate and maintain a clean and healthy relationship with other sober people. This companionship replaces previous substance abusing peers and friends (Therapeutic Communities of America, 1999).



2.4.3 Psychological treatment: Treatment options are offered in individual or group format. Cognitive behavioural treatment is commonly used for substance use disorders, it is based on the premise that maladaptive behaviours such as cannabis abuse are initiated and perpetuated by cyclical negative thought processes, behaviours and emotions. Treatment focuses on breaking the cycle by psycho-educating the patient and then teaching new positive coping mechanisms (McKay & Hiller-Sturmhoffel, 2011).

2.4.4 Pharmaceutical treatments: These treatments constitute the use of prescription medications to reduce or inhibit the abuse of a given substance. These medications are

prepared specifically to interfere with the long and short-term neural effects of the abused substance (Sylvest, 2009). They assist treatment by facilitating detoxification, managing withdrawal symptoms, substituting physiological craving cycles and boosting sobriety indirectly (Volkow, 2010). Disulfiram antagonises cravings for alcohol. Xanax and Valium are benzodiazepines that reduce withdrawal symptoms during detoxification (Colker, 2004). Methadone and Naltrexone are used as replacement drug regimens for people who are dependent on opiates such as heroin. (Hawk et al, 2017).

Figure 1.2 below is a basic illustration of the treatment process.



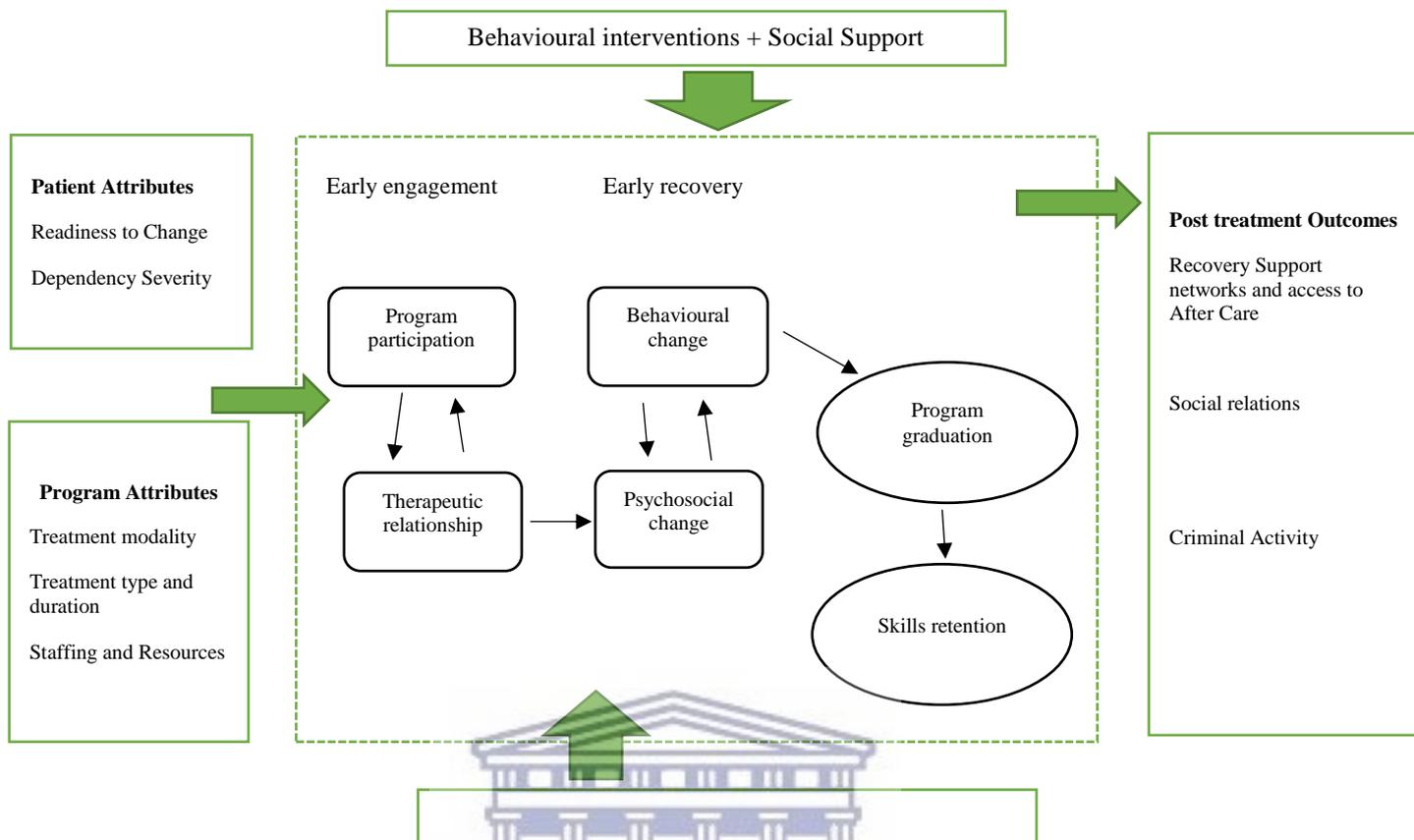


Figure 1.2: A conceptual framework for substance abuse treatment process and outcomes, (adapted from Simpson, 2004).

2.4.5 Treatment admission:

SACENDU data report series collects national substance abuse admission data bi-annually from approximately 75 treatment centres in nine provinces. The report stated that there had been a small but steady rise in new admissions in the period 2014- 2015 (Dada et al, 2015). In 2014, 10 197 people sought treatment for substance abuse, in 2015 the number rose to 10 936; these figures include both new admissions (first time treatment seekers) and repeat admissions (people who have been treated before).

During the three year period 2008-2010, the Western Cape recorded treatment admission figures of a total 17 820 (Dada et al. 2015). This figure shows more than 40% increase in admissions when compared to the 18 month period between January 2015 and

June 2016 that recorded a total 9 174 admissions (Dada et al, 2017). Treatment admission statistics are used as an estimate for the demand rate for substance abuse treatment. The demand rate for substance abuse treatment is a good indicator of substance dependence prevalence. From the above statistics, it becomes evident that provinces with higher drug related crime incidences also reported higher admission rates to treatment (Bayever, 2016). The demand rate is also a good indicator of substance related health care distribution; it outlines deficits and inequities in service provision (Sorsdahl et al, 2012).

2.5 Treatment Access and Outcomes

2.5.1 Factors impacting access to treatment

A barrier identified in accessing substance treatment services is the presence of comorbidity. Referral agents at treatment centers have reported that patients with mental illness are often not referred to state-funded inpatient facilities as such establishments do not have the resources to treat comorbid mental illness (Isobell, Kamaloodien, & Savahl, 2015). Furthermore, patients needed to be considered mentally stable before being admitted to inpatient treatment, which requires a referral from the referring agent as well as a psychologist (Isobell, Kamaloodien, & Savahl, 2015).

Inpatient treatment centers in South Africa are more likely to provide psychiatric medications and mental health services than outpatient centers (Myers & Fakier, 2009). These findings may be a result of the lack of professionally trained psychologists and psychiatrists employed in community-based intervention services (Kaminer, Owen, & Schwartz, 2018). Due to the current referral system and lack of integration between the health care systems, many individuals are expected to address their needs by accessing mental health clinics, HIV/AIDS clinics and drug abuse treatment separately (Myser, Carney, & Wechsberg, 2016). This in turn reduces the likelihood of seeking treatment and successful recovery. Currently,

there is no evidence of an integrated treatment program which addresses both SUD and mental illness simultaneously

Individuals are more likely to utilize treatment services when advice is received from friends or family to enroll in a certain program (Myers, Louw, & Pasche, 2010). Currently, perceptions held by individuals with SUD of substance abuse treatment services are that they are ineffective and even abusive (Meade, et al., 2015). As such, empirically testing the effectiveness of treatment services available in Cape Town, and their ability to successfully integrate individuals in recovery into their community is essential.

2.5.2 Treatment success and outcomes

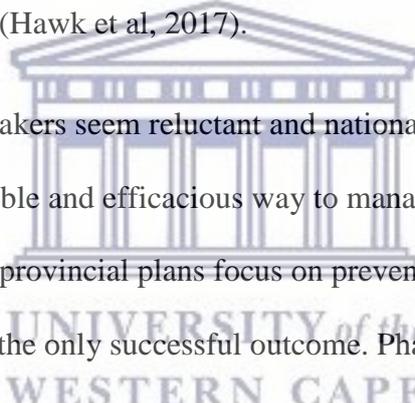
Treatment success is an elusive concept in the field of recovery. Two major questions arise; a) how can treatment success be quantified; b) is treatment success analogous with long term abstinence and sustained gains in recovery? (Fertonani- Affini, et al, 2013) The former question is answered differently depending on temporal factors, substances used and theoretical paradigm applied. Some treatment programs focus on reduction of substance use while others look at temporal sobriety/ abstinence and other programs assess for qualitative changes in lifestyle/ life choices that indicate shifts from previous substance related behaviours (Shea, 2014). Thus the core objective of treatment emerges as either moderation /reduction of substance abuse behaviour or the complete elimination of the behaviour, which is abstinence (Sobell, Ellingstad & Sobell, 2000; Stea, 2013).

Abstinence: Abstinence can be conceptualized and defined differently depending on the research scope and situational factors in the community being studied. White (2012) identified five different definitions of abstinence. First, abstinence as an absolute state of sobriety where the individual ceases to use/ abuse any drug or alcohol. Second, present-time abstinence where the individual is only abstinent during a health assessment or follow-up

visit. Third, minimum time based abstinence focuses on minimal time spent sober. Fourth, involuntary abstinence where the person is forced to stay drug and alcohol free by external forces like the legal system. Fifth, essential abstinence looks at the quantity of substance consumed during a lapse and asserts whether the minimal allowance was exceeded (White, 2012).

Harm reduction: All activities in aftercare and treatment that seek to re-align people who abuse substances with their communities and reduce the internal and external risks of drug use are considered harm reduction (Sobell, Ellingstad & Sobell, 2000; Talley, 2017). Harm reduction strategies focus on limiting the damage done by the substance use behaviour to the individual and to the community (Stea, 2013). The harm reduction model is the theoretical opposite of the disease model of substance abuse. It is less punitive and more compassionate and accommodating in its approach to prevention and treatment management (Fertonani-Affini et al, 2013). The disease model is binary, you either have a substance use disorder or you don't. If you do, there are only two choices: a) sobriety/ abstinence which mean the disease is in remission, or b) continued drug use which means the disease is still active (Leshner, 2003). Harm reduction theorists found these options too rigid and proposed that substance use disorders can be extremely diverse and thus should be placed on a continuum (Cullinan, 2016). Some substances and some patterns of abuse can be quite dangerous to the user and the community, while others are not. Harm reduction also takes into account nuanced contextual and demographic differences and accommodates them (Hawk et al, 2017). Harm reduction does not judge substance abusers nor does it force treatment choices on them (Enders, 2009). It empowers through psychoeducation and choice. Harm reduction does not aim to prevent substance abuse it aims to reduce or prevent the consequences that come during and afterward (Hawk et al, 2017)

A current trend in harm reduction policies globally is the proposal that drug sales, drug abuse and related activities should be de-criminalised (Bayever, 2016). Proponents of this movement are advocating for more human rights based approaches that eliminate stigma and discrimination that serves as a barrier between health/social/economic services (medication, housing, employment) and people with substance use disorders (Bayever, 2016). The core aim is to make drug use safer and less harmful for people who are struggling to stay clean or control their addictions (Fellingham et al., 2012). Some examples of harm reduction strategies that are employed globally include e-cigarette substitution for tobacco; gel capsules to substitute needles for methamphetamines; the opioid replacement pharmacotherapy option that gives heroin abusers oral methadone or naltrexone, clean needle exchange centres and overdose prevention programs (Hawk et al, 2017).

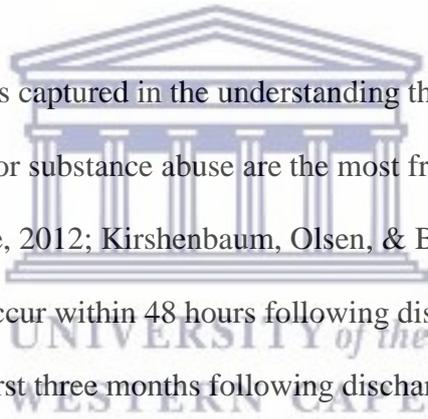


South African policy makers seem reluctant and national legislature has been slow to adopt harm reduction as a feasible and efficacious way to manage substance abuse (Scheibe et al, 2017). Annual national and provincial plans focus on prevention and treatment strategies that outline total abstinence as the only successful outcome. Pharmacological harm reduction methods such as methadone substitution are written in legislature but are scarcely implemented (Gray, 2017).

This delay in adaptation to global trends has led to a continuous trend of problematic substance use (Saban, Flisher, Laubscher, London & Morojele, 2014) and variable treatment dropout rates. Dropout rate varies between 6% and 55% (Ramlagan, Peltzer, & Matseke, 2010), depending on the nature of treatment and substances used. In general, outpatient facilities have higher dropout rates than in-patient facilities (Strebel et al, 2013).

2.6 Aftercare

Aftercare is defined as a continuing program of health care and rehabilitation to reinforce the healing gained during hospitalization or inpatient treatment (Segen's Medical Dictionary, 2011). Van der Westhuizen (2010) stated that after care services foster progressive shifts in lifestyle that include building self-efficacy, building the ability to identify and cope with triggers and tackling early warning signs of relapse. Shea (2014) recommended that aftercare should be seen as an extension of treatment and an additional resource for recovery. Some aftercare programs offer free, flexible peer-based support like halfway homes and 12-step programs. Others offer structured, professional-led services that augment gains received during inpatient treatment

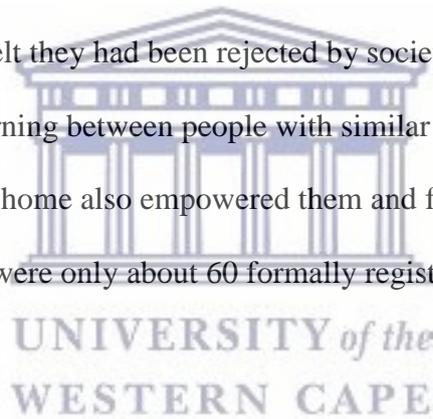


The need for aftercare is captured in the understanding that the first five years following inpatient treatment for substance abuse are the most fragile for the individual (Cunningham & McCambridge, 2012; Kirshenbaum, Olsen, & Bickel, 2009). Ideally, the first aftercare session should occur within 48 hours following discharge from inpatient settings (Calland, 2013). The first three months following discharge from treatment have the highest risk for relapse as the patient must adopt a new sober lifestyle without the structures provided during residential treatment (White, 2007).

Gordon (2003) placed potential recovery at 60% during the first twelve months following discharge if after care is accessed and utilised. This means that of every 100 people that receive inpatient treatment for substance abuse and after care afterwards, 40 may act on triggers and urges resulting in relapse during the first year of recovery. Thus, the emphasis on post-treatment aftercare and support is fuelled by the lack of treatments and assessments that decrease the risk of relapse after discharge (Pienaar, 2000). Miller et al. (2015) from the disease model viewpoint, questioned the lack of pharmacological aftercare. They put forward

that the neurological aspect of addiction should be carried through to aftercare and not end in medical treatment settings. Extended pharmaceutical care and support could be extremely meaningful for long term substance abuse patients (Gray, 2017). There are several forms of after care available including; halfway houses, therapeutic communities, religion affiliated after care groups and other self-help groups.

Halfway houses, recovery homes and other sober living environments provide clean, safe and affordable shelter for people recovering from substance dependence (Colker, 2004). These houses do not normally provide any formal treatment such as, medical or mental care. The sole aim is to provide a living space free of crime, alcohol and drugs and other physical relapse triggers (Polcin, 2006). Brunetti (2014) found that sober living homes created a sense of belonging for people who felt they had been rejected by society. There were elements of mutual growth and mutual learning between people with similar afflictions. The administration of the recovery home also empowered them and fostered responsibility and accountability. In 2013, there were only about 60 formally registered halfway houses in South Africa (Mkhwanazi, 2014)



Twelve step recovery programs have been the hallmark of substance abuse treatment and after care ever since 1935 when Bill Wilson started developing the tenets of the Alcoholics Anonymous movement. Relying mainly on his own recovery journey and guidance from colleagues in the medical and spiritual fields. Wilson endorsed the disease model for alcoholism and developed the twelve steps and traditions (Gilbert, 2015). Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) have members in more than 120 countries (Colker, 2004; Sanders et al, 2014).

A review of a set of clinical trials was conducted to measure post treatment cognitive, behavioural and motivational factors in 12 step group populations. Findings showed better post treatment prognosis for patients who attended and actively participated in these groups.

Data sets collected at three month intervals showed stable increases in actual and potential abstinence as compared to patients who were not part of ongoing after care systems (Moos & Timko, 2008).

Majer et al (2013) reported that meeting attendance was unrelated to abstinence/relapse outcomes for substance abuse. These authors found that continuous abstinence at the two-year follow up point was due to active commitment and involvement in 12-step practices and adherence to 12-step traditions. Thus even though attendance is a good indicator for positive post treatment outcomes, it should be supported by active participation. The patient in aftercare should commit his/ her mental and emotional energy towards material shared during group meetings (Hernandez, 2016). The majority of self-help groups offer verbal and written material. Verbal materials include testimonies from recovered persons, motivational talks and one-on-one support. Written resources include written material in the form of 12-step books and 12-step literature pamphlets. Twelve step groups also assign a recovery sponsor to each new group member. This sponsor acts as a mentor and guide who facilitates a sober and safe transition for the new member (Moos & Timko, 2008; Sanders et al, 2014). Magura et al (2013) found a strong, positive, significant link between alcohol abstinence and AA participation. Witbrodt and Kaskutas (2005) reported a similar trend across groups defined by drug of choice. Their stratified sample compared alcohol only, drug only and polydrug abusers. All three groups showed higher abstinence levels at 6 months and 12 months for people who attended 12 step meetings or other self-help groups.

Klein and Slaymaker (2011) examined gender differences in AA and other 12-step program involvement and resultant abstinence and/ or relapse during the first six months after inpatient treatment. Results showed no gender differences in engagement in 12-step meetings. There were however significant differences in relapse patterns. Females showed higher

abstinence efficacy with increased meeting attendance. Whereas male abstinence was better predicted by affiliation and having a 12-step sponsor.

Kaskutas et al.(2005) found significant differences between men and women in attendance of self-help groups and abstinence outcomes. Their study revealed that after treatment, more women were likely to attend self-help and 12-step after care groups as compared to men. Women also showed better outcomes within the 1st year of recovery that was linked to higher levels of attendance, commitment and involvement in group activities and use of other self-help material. Sanders et al. (2014) similarly found that meeting frequency, attendance and participation positively correlated with post treatment abstinence in women. Their studies also uncovered qualitative differences in 12 step experiences for men and women. Some women reported the need for creative reconstructions of standard AA material to avoid shame, stigma and other negative psychological experiences. Witbrodt and Delucchi (2011) took a temporal approach to gender differences by conducting a seven-year longitudinal study with 2-year data analysis intervals. Results showed significant gender differences in commitment to 12-step programmes. Males showed higher attrition rates and lower abstinence over time.

Differences in age and potential benefit from self-help groups has not been established. Lemke and Moos (2003) divided post treatment patients into three age groups; older (55 years and above), middle (40-54 years) and younger (21-39 years). With all other variables held constant, there were no significant differences in the recovery outcome for the age groups at both 12 and 24 month follow up points.

After care programs that are not 12-step based are collectively referred to as peer recovery management systems. The following are examples of some peer recovery management systems found in South Africa; Secular Organisation for Sobriety (SOS) is a non-religion based, non-governmental organisation that coordinates events and meetings for

people in recovery. Self-Management and Recovery Training program (SMART) is geared towards sustainable sober life changes and behaviour modification in recovery. NARCONON combines mental, physical and nutritional elements of recovery and Women For Sobriety (WFS) focuses on gender specific challenges on the path to sober living (Jeewa & Kasiram, 2008). Peer recovery management systems or groups are often coordinated by churches, prisons and local non-governmental organizations.

Peer recovery management systems offer four key forms of support that have proven to be crucial to positive substance abuse treatment outcomes (Kaplan, 2008). First, peer support services especially in group format provide a sense of belonging and affiliative support, allowing the individual to make sober social connections with people who share similar life challenges (Salzer, 2002). Second, peer groups offer health and wellness information, life skills support and unlimited experiential learning opportunities in a safe and clean environment. Third, emotional support is offered in terms of mutual respect, care, empathy and compassion between group members. Fourth, peer systems offer concrete, instrumental support for difficult tasks like debt management, legal or occupationally based advice, applications and so forth (White & Evans, 2014).

2.7 Recovery and Relapse

Recovery is defined by McLellan et al. (2007) in terms of measurable post treatment outcomes, performances and quality. They outlined the client's clinical symptoms, internal and external behaviours; and measured levels of functioning (social/educational/occupational) as indicative of recovery. Similarly, the Betty Ford Institute defined recovery as "a voluntarily maintained lifestyle characterized by sobriety, personal health and citizenship" (Betty Ford Institute Consensus Panel, 2007, p. 222). This definition subtly underscores the fact that abstinence is not the core goal of recovery. Recovery is dynamic and should be marked by personal growth, productive social engagement, well informed/ non-impulsive decision-

making and overall healthy living (Betty Ford Institute Consensus Panel, 2007). In comparison, within the disease model, recovery is managed remission and the disease becomes dormant.

The constructs lapse and relapse are on a continuum of severity of use. A lapse is an initial episode of drug or alcohol use following a period of abstinence from that particular substance. A relapse is the full return to previous patterns of substance use following a period of abstinence (Marlatt, 1985). The belief that recovery processes are linear is false and misleading. It is dynamic and requires close monitoring at an internal and external level (Kadam, Sinha, Nimkar, Matcheswalla & De Sousa, 2017). Approximately 25-35% of patients are re-admitted for treatment within the first 12 months following discharge. These figures are indicative of the high relapse potential of the first year (Lowe, 2013). Some patients are re-admitted for the same substance, while others are re-admitted for a different substance with relapse having been caused by the failure to change behavioural patterns of dependence. Relapse can be quite frustrating for researchers and clinicians and most times create challenging obstacles to successful recovery (Jung, 2001; Connors & Maisto, 2006; Kadam et al, 2017). Relapse following treatment and partial sobriety has been associated with higher mortality rates including death by overdosing and suicide (White, 2007).

The term recovery capital summarises internal and external resources and forces that facilitate the initiation and maintenance of recovery processes (White & Chaney, 2012). The point of acute inpatient treatment and aftercare is to activate or avail recovery capital. The quality and quantity of one's recovery capital directly influences the recovery outcomes (White & Cloud, 2008). The External and internal factors that constitute types of recovery capital and affect relapse in recovery are discussed below:

2.7.1 External risk factors for lapse and relapse are outer, environment based variables that interact with internal efficacy expectancies and affect an individual's ability to abstain and recover fully from substance dependence. Access to after care, employment status, family support and social support were identified as external risk factors

Access to after care: Aftercare is a post hospitalization program of rehabilitation designed to reinforce the effects of therapy and to help the patient adjust to his environment (American Psychiatric Glossary, 1988). Having safe and accessible premises where people abusing substances can honestly discuss their daily struggles with cravings, withdrawal and other relapse triggers is an important factor in recovery (Maluleke, 2014). Aftercare may be in the form of self-help groups, support groups, halfway house services or post treatment outpatient groups.

Employment Status: unemployment and a general lack of social infrastructure such as, positive recreational activities or volunteer work is implicated as contributing factors to relapse (Maluleke, 2014). Unemployment creates boredom which is cited as a clear trigger for relapse (Martinez-Gonzalez, Lopez, Lozano-Rojas & Verdejo-Garcia, 2018). Unemployment also affects the recovering person's socio-economic functioning. His/her ability to afford basic, but substance free housing, transport to aftercare, medication, education and other important amenities. Recovery homes usually require inhabitants to pay a minimal fee towards the maintenance of the house, food and utilities (Polcin, McAllister Henderson, Korcha, Evans, Wittman, & Trocki, 2012).

Family Support and Social Support: Bhandari, Dahal and Neupane (2015) reported that relapse occurs more frequently when the person in recovery either has no support from his/ her family members/ spouse or is in continual conflict with them. Swanepoel, Geyer and Crafford (2015) identified negative peer pressure as relapse triggers. Sharma et al (2012)

attributed relapse to a lack of general social support such as, close supportive friends and positive peer networks. Similarly, social rejection and discrimination also were predictive of relapse (Maehira et al, 2013).

Substance Choice: Substance choice has been identified as an external factor that impacts recovery and the likelihood of relapse (Maehira, et al, 2013). There are patterns to substance use and availability that predisposes the recovering addict to continued use as a result of how readily the drug of choice is in their environment. Certain types of drugs are used more in social contexts and thus the recovering addict returns to a social life in which use of particular drugs might be an integral part of the social fabric (Okamoto, Kulis, Helm, Edwards & Giroux, 2014). In this way, the risk for relapse is increased exponentially since the social context of the recovering addict might support, endorse or require the use of the drug of choice. A differential pattern to relapse and relapse risk has been reported for the respective drugs of choice (Maehira, et al, 2013). For example, heroin users reportedly relapse more than cannabis users. Thus, knowledge of the differential patterns and social contexts associated with the drug of choice can be harnessed as recovery capital as it helps to be more specific about the risks for the recovering addict as a function of drug of choice and associated drug use behaviour. It is also important to understand what function the drug of choice fulfils for example, what are the benefits personally, interpersonally and socially when using stimulants as opposed to depressants (Lamb, Maguire, Ginsburg, Pnikston & France, 2016).

2.7.2 Internal risk factors for lapse and relapse affect an individual's ability to abstain and recover fully from substance abuse and dependence. These factors are intra-personal variables that interact with mental efficacy expectancies. Internal risk factors include

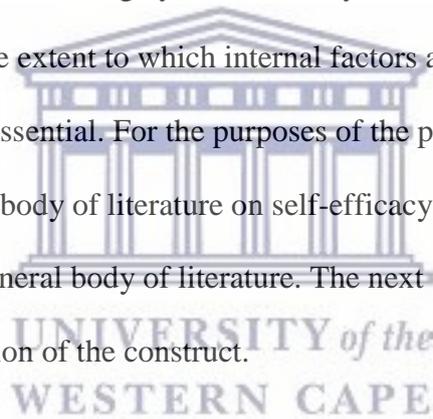
mood factors e.g. emotion regulation, gender and psychological constructs such as, self-efficacy.

Mood factors: Emotion states and the general regulation thereof has significant effects on the recovery process (Swanepoel, Geyer & Crafford, 2015). Both happy and sad mood states serve as relapse triggers (Martinez-Gonzalez et al, 2018). The presence of comorbid mental illness and individual self-motivation levels had predictive value in relapse/recovery outcomes (Adamson et al., 2009; Hosseini, Moghimbeighi, Roshanaei & Momeniabat, 2014). Anxiety, depression, mania and insomnia involve continuously fluctuating states of sadness, euphoria, low motivation, feeling disconnected and fearful; these are linked to higher relapse rates (Guzman-Facundo & Pedrao, 2008; Appiah, Danquah, Nyarko, Ofori-Atta & Aziato, 2017).

Gender: Walitzer and Dearing (2006) conducted a review on articles published about gender differences in recovering communities. Of the seven alcohol related studies reviewed, only two reported significant gender differences in the occurrence and time interval between rehabilitation discharge and initial relapse episode. Fewer studies were reviewed for illicit drug dependence, fortunately, the pattern of findings was more consistent. Guzman Facundo and Pedrao (2008) indicated that women were less likely to relapse following inpatient treatment for drug addiction. An interesting fact that emerged at baseline for most studies was that women presented with poorer prognostic characteristics at pre-treatment stages (National Institute on Drug Abuse, 2018). These characteristics included poor mood and affect regulation, symptoms of recurrent depression and suicidal behaviour (Jain, 2015). These gender differences lead us to speculate or question the role of biological sex and societal gender roles as factors in post treatment settings (National Institute on Drug Abuse, 2018).

Self-efficacy: multiple studies that examine treatment outcomes, specifically relapse and what causes it, have implicated self-efficacy as an intrapersonal factor that can be manipulated to increase recovery capital (Maisto, Connors & Zywiak, 2000; Chavarria, Stevens, Jason & Ferrari, 2012; Spek et al, 2013; Abdollahi et al, 2014;). High abstinence self-efficacy has positive outcomes in maintaining sobriety (Kadden & Litt, 2011).

Summary: From the above overview, it becomes evident that substance abuse remains a major problem with grave sequelae. Treatment demands remains high whilst treatment in itself has limited success. The risk for relapse exponentially increases in relation to the availability of after care. Active participation and commitment were identified as integral to success and sobriety. Participation is largely influenced by internal factors such as self-efficacy. Thus research into the extent to which internal factors are present in samples of patients in early recovery are essential. For the purposes of the present study self-efficacy was selected based on the growing body of literature on self-efficacy in substance abuse treatment and recovery, as well as the general body of literature. The next section of this chapter attempts to provide an exposition of the construct.



Section Two: Self-Efficacy

2.8 Definition of self-efficacy

Self-efficacy (SE) is broadly understood as an individual's beliefs about their ability to behave in a certain way, or accomplish a certain goal (Albert Bandura, 1977). These beliefs have a strong influence on the activities and settings individuals chose to engage in (Bandura 1982). A distinction is made between SE and controllability (Ajzen, 2002), where perceived control refers to beliefs held about the extent to which behaviour is purely up to them or is influenced by their circumstances. In this regard, SE is the belief in, or judgements made about the difficulty or ease of engaging in a particular behaviour, and the internal attribution of success (Leganger, Kraft, & Røysamb, 2000). This definition has been widely applied and accepted in behaviour change interventions and research (Blomqvist, Hernandez-Avila, Burleson, Ashraf, & Kranzler, 2003; Chavarria, Stevens, Jason, & Ferrari, 2012; Leganger, Kraft & Røysamb, 2000; Marks, Allegrante, & Lorig, 2005; Prestwich et al., 2014).

According to Bandura (1982), judgements of SE are developed in the context of social learning, and are based on four types of information. First, past experiences of mastery or failure are used to inform an individual's performance attainments or ability. Second, making determinations of whether something is doable is informed on observing others perform a behaviour successfully. Third, individuals can be encouraged and motivated to perform behaviours through verbal and social influences, as well as persuasion. Persuasion helps to alleviate self-doubt and promotes attempts at change. Fourth, individuals judge their capability based on context specific emotional arousal and physiological states such as, strength, anxiety, or vulnerability.

SE is an important factor in behavioural change efforts, because of its influence on the decision to engage in a behaviour (intention), the effort expended, and the persistence when facing difficulties (Bandura, 2004). In this regard, high SE is associated with an attraction to

things that individuals are good at, motivates higher effort, and usually results in the experience of success, which further validates SE in that domain (Bandura, 1991). In a review of meta-analysis Bandura and Locke (2003) found that higher SE was related to longer perseverance in difficult situations, reduced anxiety and stress, level of performance, and coping behaviour. As such, instilling a strong sense of efficacy has the potential to activate and develop competencies and capabilities in various areas. Additionally, increased SE, and the resulting achievements, may also play a role in shaping self-esteem (Lightsey, Burke, Henderson, & Yee, 2006).

2.9 Self-efficacy as a predictor of behavioural change

SE has been found to predict favourable outcomes in various health behaviours. For example, Ashford, Edmunds, and French (2010) reported increasing physical activity as a function of SE. Anderson-Bill, Winett, and Wojcik (2011) reported SE was a predictor of the ability to reduce high fat foods. Fruit and vegetable intake was a function of SE (Kreusikon, Gellert, Lippke, & Schwarzer, 2012). Marks, Allegrante & Lorig (2005) reported that SE could significantly predict disease management. SE was a significant predictor of HIV treatment adherence (Johnson et al., 2007). Similarly, Sheeran et al. (2016) reported that SE significantly predicted condom use.

High SE in particular domains was associated with external attributions/explanations of failure, while low SE was predictive of internal attributions of failure (Leganger et al., 2000). SE in specific domains is the strongest predictor of that behaviour. For example, Leganger et al. (2000) found that while General Self-Efficacy (GSE) was related to Smoking Specific Self-Efficacy (SSSE), only SSSE predicted the intention to quit smoking. However, GSE may be a better predictor of behaviour in situations which have not yet been encountered, thus expectancies have not been developed (Lightsey, Burke, Henderson & Yee, 2006).

Most research surrounding SE and health behaviour change was correlational (Adamson, Sellman, & Frampton, 2009; Greenfield, 2010; Chavaria et al, 2012; Connor et al, 2014). Self-efficacy typically was measured either before or after the intervention, and the interventions used were not necessarily focused on enhancing SE cognitions (Spek et al, 2013; Young et al, 2012; Torrecillas et al, 2015). While these studies highlight the importance of SE in health behaviour change, they don't directly address whether interventions aimed at increasing self-efficacy are resultant in behaviour change.

To address this problem a meta-analysis of experimental interventions was conducted by Sheeran et al. (2016) who found that interventions aimed at increasing SE were successful in doing so, and that such interventions also resulted in behaviour change. These results provide robust evidence that interventions aimed at changing SE cognitions are effective in promoting behavioural change. Interventions incorporating stress management, and self-monitoring (Prestwich et al., 2014), provision of feedback (Ashford, Edmunds & French, 2010), active participation in goal-setting, promoting active (rather than passiv) coping strategies setting, and Motivational Interviewing (MI) (Kadden & Litt, 2011) have shown success in promoting SE.

2.10 SE in substance abuse treatment and recovery/ after care

2.10.1 Self-efficacy as a predictor of abstinence

There is considerable evidence that SE is predictive of abstinence from substances (Dolan, Martin, & Rohsenow, 2008). A large body of research has measured SE either before or after treatment, without SE specific intervention efforts being directly incorporated into treatment (Patton et al., 2018). Kadden and Litt (2011) found that SE predicted both frequency and quantity of substances consumed. Choi, Krieger, & Hecht (2013) identified that there are two types of efficacy which are generally measured in substance use research and intervention namely, refusal response self-efficacy, and substance-specified resistance SE (or abstinence

SE). Refusal response SE is generally associated with social pressure, or the ability to ‘say no’ in various situations (Patton et al., 2018). Substance specific resistance SE is the ability to resist using substances in various stressful, or positive (thus tempting) situational circumstances (Ilgen, McKellar, & Tiet, 2005).

Alcohol related SE has been found to be the strongest and most consistent predictor of treatment outcomes when considering various other patient characteristics (Adamson, Sellman, & Frampton, 2009). Low pre-treatment SE beliefs have been associated with relapse in interventions (Blomqvist, Hernandez-Avila, Burlison, Ashraf, & Kranzler, 2003; Moos & Moos, 2006). After discharge, a positive change in self-efficacy from entry predicted abstinence from drug and alcohol use (Chavarria et al., 2012). It has also been shown that abstinence from substances itself may increase self-efficacy beliefs (Kadden & Litt, 2011) which is in line with Bandura’s (1982) notion that mastery or performance accomplishment is the most influential factor in SE development.

Ilgen, McKellar & Tiet (2012) reported that SE was associated with abstinence at treatment entry, discharge and 1-year follow-up. Specifically, these authors found that complete (100%) confidence of abstinence at discharge was the strongest predictor of abstinence after one year. Similarly, Vielva and Iraurgi (2001) reported that individuals in treatment who had high confidence in their ability to resist alcohol consumption were the most likely to be abstinent at 6 month follow-up. This highlighted the clinical importance of strengthening SE beliefs in the treatment of substance use.

2.10.2 Self-efficacy in interventions aimed at abstinence

Treatment approaches that focus on cognitive processes and behavioural skills, such as Cognitive-behavioural therapy (CBT) and Psycho-education (PET) approaches, have shown to be successful in enhancing SE (Burlison & Kaminer, 2005). Kadden and Litt (2011) reported that CBT approaches have marginally better outcomes than psychoeducation.

Research showed that SE significantly predicted abstinence. For example, Burlison and Kaminer (2005) reported abstinence during treatment as a function of SE. Kadden and Litt (2011) reported that SE significantly predicted reduced problem drinking. Similarly, Lozano and Stephens (2010) reported that SE was a significant predictor of reduced alcohol consumption.

Among individuals in after care sober-living homes, higher abstinence SE was found to be significantly associated with lower depression and fewer anxiety symptoms (May et al., 2015). This finding underscored the importance of SE in positive affect in the context of substance use recovery. Most research surrounding SE in treatment and abstinence showed that the association was strongest while in treatment or during the intervention (Blomqvist et al., 2003; Burlison & Kaminer, 2005), or shortly after treatment (Choi, Krieger, & Hecht, 2013; Dolan, Martin & Rohsenow, 2008; Lozano & Stephens, 2010). Individuals who were abstinent during treatment are more likely to have sufficient coping skills and strong self-efficacy which allows them to resist social and environmental pressures for substance use (Taylor & Williams-Salisbury, 2015). However, there is a lack of long-term follow up on these findings. After care programmes are vital in promoting and maintaining SE, as patients who receive continued care following treatment have been found to have higher SE and less substance use (Kadden & Litt, 2011; McKay et al., 2004). Thus, there is a need to examine the levels of self-efficacy in local samples of early recovery individuals who are attending aftercare. The present study attempted to explore the levels of self-efficacy in a sample of individuals in early recovery who are attending aftercare. The study further attempted to assess the associative and predictive relationships between self-efficacy and demographic variables identified in the literature.

CHAPTER THREE

METHODOLOGY

3.1 Aim of the Study

The primary aim of the study was to explore self-efficacy in a group of patients attending after care facilities in the first twelve months after treatment.

3.2 Objectives

- a) Determine self-efficacy levels in a sample of patients in early recovery during the first twelve months after treatment.
- b) Examine associative relationships between demographic variables and self-efficacy in a sample of patients in early recovery during the first twelve months after treatment.
- c) Examine predictive relationships between self-efficacy, gender, age, time post treatment and sobriety in early recovery.



3.3 Research Questions

1. What is the level self-efficacy in a sample of patients in early recovery?
2. Are there significant associations between demographic variables and self-efficacy in early recovery?
3. Can self-efficacy, gender, age and time post treatment significantly predict sobriety in early recovery?

3.4 Population

The target population was recovering addicts i.e. individuals in early recovery after attending an inpatient treatment for substance use disorders. The study aimed to recruit from adult recoverees to avoid the double vulnerability of minor status and recovering addicts. The present study focused on adults as defined by the legal age to use drugs or substances. The Community Survey Census of 2011 reported 5.82 million people living in the Western Cape, estimated 40% are above the legal age (Statistics South Africa, 2012).

Participants had to be literate and able to complete the survey instruments in English. This language requirement was considered appropriate as most intervention programmes were presented in English (Sodano et al, 2009). Participants were recruited from the population of recovering addicts who received in-patient treatment for substance abuse in the twelve months spanning April 2014- April 2015 and were attending aftercare at the time of recruitment for the study. Emphasis was placed on research inclusion characteristics, availability and willingness of the participants at the expense of randomization and equal opportunity. The population of people who received treatment between June 2011- June 2012 was estimated at 2800 according to the admissions data for the Western Cape (SACENDU, 2012).

3.5 Sample

Two stage sampling method was utilised in the present study. Clusters are naturally occurring intact groupings of elements/people who share at least one homogenous factor such as geographical location or organizational affiliation (Daniel, 2012). The first stage of the sampling process was cluster sampling which involved identifying geographically accessible clusters in the Western Cape where the study was based. Cluster sampling requires fewer resources in terms of time, labour and money (Walliman, 2011). Eight clusters were identified where formal and informal aftercare meeting venues and facilities in different geographical

locations including Tableview, Parow, Woodstock, Maitland, Mitchells Plain, Wynberg, Bellville and Paarl.

In the second stage participants were sampled randomly. All eligible participants were invited to participate in the study which enhanced generalizability (Robson, 2011). Random sampling was appropriate for the present study given the quantitative nature of the study and the survey design (Zhi, 2014). The aim was not to ensure representativeness across demographic factors such as race or class since the population was defined in terms of their recovery status (Etikan, 2015). The impact of demographics was not ignored, but for the purposes of the study, the first level of definition and recruitment was at the level of clinical population. Respondents for the final sample of this study were recruited from aftercare and peer support groups across Cape Town. All participants recruited for the sample met the inclusion criteria and indicated the willingness and capacity to participate.

The exclusion criteria for the sample included two primary considerations. First, individuals who were in recovery for longer than twelve months were not eligible to participate in the study. The period post treatment was an important exclusion criterion as it related to the definition of early recovery. The second exclusion criterion involved clarity of thought and ability to engage in self-directed behaviour sufficiently to complete the required research process. At a practical level, eligible respondents who were willing to participate but displayed marked failure to understand information pertaining to the study and questionnaire items during assisted administration, were excluded from the study. The final sample consisted of 105 participants.

3.6 Research setting

The present study was conducted in the Western Cape Province that forms approximately 12% of the nation, with an estimated 6.2 million people. Two thirds of this population is aged between 15 and 64, with more females than males (Western Cape Government, 2016). As mentioned before, the province has a high demand for treatment and high incidence of substance use disorders (Sorsdahl et al, 2012; Dada et al, 2015; Bayever, 2016). In the Western Cape, aftercare is provided by both public state funded facilities, private treatment institutions and Non-Governmental-Organizations (Strebel et al, 2013).

3.7 Design

This study was conducted using a survey design. Survey research was deemed appropriate for the present study based on Gideon (2012) who identified that survey research was a multidisciplinary method frequently used in social sciences. The present study adopted a cross-sectional approach. Cross-sectional surveys provide a snapshot of the behaviour of a population at one given point in time (Yu & Tse, 2012). A cross-sectional survey was feasible given the nature of the target population and the reported efficacy in procuring useful information about health behaviours in a range of populations.

Stoop and Harrison (2012) identified that survey ‘types’ are differentiated by the mode of administration. Surveys can be researcher –administered or self-administered by participants (Gideon, 2012). The survey can also be administered face-to-face, telephonically, by mail or online (Stoop & Harrison, 2012). The present study used a face-to-face, self-administration mode. This decision was based on the reality that the target population was a vulnerable population and the face-to-face administration allowed for building rapport with clients and availability to clarify questions related to the completion of the instruments. Self-administration meant that participants had to be literate which placed some limitations on who

could participate. In the event where literacy levels posed a challenge, the researcher was able to assist in the administration as recommended by Gideon (2012). Though this was a contingency plan, it was not required in the unfolding of the process.

The survey was also intended to be of a quantitative nature. Walliman (2011) recommended the use of quantitative methods for its statistical adaptability and high empirical value. Quantitative methods of measurement suited the study as the topic has a sufficient basis of literature which meant that quantitative instrumentation was feasible.

3.8 Response Rates

Kennedy and Vargus (2001) identified response bias and low response rates were as disadvantages of surveys. Researchers identified that paper administrations are most likely to produce the highest response rates (Dommeyer, Baum, Hanna, & Chapman, 2004; Deutskens, Ruyter, Wetzels, & Oosterveld, 2004; Watt, Simpson, McKillop, & Nunn, 2002). The average response rate that can be expected across modes of administration is 33% (Nulty, 2008). There is no consensus on response rates, but a response rate of 50 percent is considered adequate for statistical analysis (Babbie, 2007).

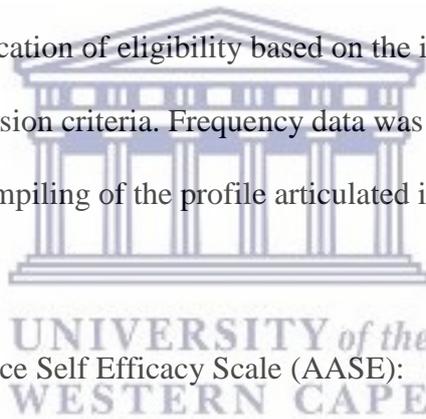
The face-to-face administration contributed to increasing the response rate in that interested and eligible participants were more likely to complete the survey. For the present study, the anticipated minimum response rate was based on the target of 50% of the sampling frame. The sampling frame was difficult to quantify as the attendance rates were variable and outside of the control of the researcher. Thus it was decided that sampling would continue until there were no further responses or until the minimum sample size of 100 was reached. The minimum sample size was informed by considerations for statistical analysis rather than response rates *per se*.

3.9 Instruments

The survey incorporated two instruments: a) demographic questionnaire and b) the Alcohol Abstinence Self-efficacy Scale.

3.9.1 Demographic data sheet:

A self-constructed questionnaire was used to elicit demographic information from the respondents (Appendix A). The questionnaire enquired about the following aspects: a) age; b) gender; c) inpatient program completion date; d) number of lapses since discharge from treatment; e) current pattern of substance use; and f) longest period of abstinence was recorded. These demographic variables related more to the recovery profile of the target group in early recovery rather than to their socio-demographic characteristics. These items were also used as an early indication of eligibility based on the inclusion criteria and ineligibility based on the exclusion criteria. Frequency data was recorded on this questionnaire to assist with compiling of the profile articulated in the research questions and aims of the present study.



3.9.2 Alcohol Abstinence Self Efficacy Scale (AASE):

DiClemente, Carbonari, Montgomery & Hughes (1994) developed the Alcohol Abstinence Self-efficacy Scale (AASE). The AASE evaluates an individual's confidence to abstain from drinking in 20 situations that represent typical drinking cues (Allen & Wilson, 2003). This instrument has two main domains namely, confidence and temptation. It also includes four subscales namely, 1) Negative affect, 2) Physical and other concerns, 3) Social/positive, and 4) Withdrawal and other urges. The original instrument has good construct validity and high internal consistency as measured by the Spearman–Brown correlation coefficient ($r = .95$) (DiClemente et al., 1994). Greenfield (2010) reported that clinicians use the ASE to track progress in residential treatment settings. Allen and Wilson, (2003) reported that the AASE has been used successfully in research to measure perceived

self-efficacy as a predictor of substance abuse outcomes. Hiller et al. (2000) adapted the AASE to measure abstinence self-efficacy for alcohol and drugs (Appendix C). The adapted AASE is a self-administered scale with 40 items with an average administration time of 20-25 minutes per respondent.

The reliability and validity of the adapted instrument was established on a sample of 250 men and women. The adaptation retained the factor structure of the original and reported excellent reliability coefficients on each of the subscales. Hiller, Broome, Knight & Simpson (2000) report Chronbach alphas of .92 for the Negative affect and social/positive subscales respectively. These authors further reported Chronbach alphas of .87 and .89 for Physical and other concerns, and Withdrawal and other urges. Hiller et al. (2000) recommended that Chronbach alphas exceeding .80 was appropriate for use in psychological research due to the high levels of internal consistency and reliability. These high values further make the instrument particularly robust given the target population.

3.10 Pilot study

A pilot study was conducted to determine whether the AASE functioned reliably in the target population. This was a precautionary measure given the stated vulnerabilities within the target group. Patients in early recovery are considered a vulnerable population and their clinical status post treatment with potential comorbid presentations were the primary concerns in the present study. A coefficient of internal consistency would provide empirical support for the reliability of the instrument in the target group. The pilot was conducted with a sample of 51 individuals in early recovery. The minimum sample size of 50 was set for the pilot study, because the t-and z-distributions become identical when N is equal to 50 (Fowler, 2009). This would then enable the use of inferential statistics to compute the required analysis to produce a reliability coefficient (Aron, Aron, & Coups, 2009). The pilot study was conducted over a three-month period. Participants who met the inclusion criteria were

recruited from an inpatient centre in Maitland, Western Cape. The participants in the pilot sample were either in their final week of inpatient treatment or had completed treatment. Permission was granted by treatment centre management for data to be collected bi-monthly. Fifty-one (N=51) participants completed the questionnaire, 57% were male, 29% were unemployed. Participant ages ranged 20-55, with average age being 34. The sample of the pilot study did not form part of the results of the final study.

3.11 Procedure

The researcher identified seven clusters from which to recruit respondents. These clusters were aftercare groups that convened weekly, consisting mainly of people in recovery and their immediate family members, for example spouses. The researcher wrote request letters and/ or approached the aftercare group leaders personally to seek authorization to conduct the study. The researcher thereafter met with gatekeepers in each cluster and discussed; a) the purpose and requirements of the study; b) confidentiality and informed consent; c) allocation of codes to the participants; d) instructions for the administration of the questionnaires and e) debriefing of the participants and referral process for the national counselling centre with contact details. This procedure was repeated with every cluster.

The aftercare facilitators presented the study details to eligible participants who then confidentially indicated their interest and gave permission for their identity to be disclosed to the researcher. The researcher set up appointments at the aftercare facility to meet with interested individuals. After consent was given, the demographic questionnaire was administered as a final eligibility check and thereafter, the AASE was administered.

3.12 Data Analysis

3.12.1 Internal consistency

Internal consistency was computed on the data of the pilot study to determine the reliability of the AASE in the target population. Field (2009) defined reliability as essentially the extent to which a scale consistently measures a construct that is, internal consistency. Cronbach's Alpha is a mathematical index that is used to measure internal consistency (Fowler, 2009). Walker and Maddan (2013) indicated that Chronbach's alpha coefficient ranges from no internal consistency (0) to complete internal consistency (1). Cronbach's alpha may be affected by the number of items in a scale; hence, the acceptable range of the alpha coefficient has been disputed (Brace, Kemp, & Snelgar 2003). Alpha scores of about 0.70 generally are taken as an acceptable minimum for satisfactory internal consistency (Clark-Carter, 2004). Field (2009) recommended that a value between .7 and .8 is acceptable for Cronbach's alphas and values lower than .6 indicate that the scale is unreliable. Tests for internal consistency were conducted for the overall scale and each subscale.

3.12.2 Descriptive statistics

Data was screened for normality, homogeneity of variance, linearity and missing data as a baseline check before proceeding with analysis consistent with the recommendation from Fowler (2009). Descriptive statistics were used to give an overview of the data, through frequency distributions and measures of central tendency (Field, 2009). Frequency distributions were used to compile the demographic profile of the participants. Clark-Carter (2004) recommended frequency distributions for use with frequency data and for compiling summations of the sample characteristics.

3.12.3 Correlation matrices:

Significant associations between self-efficacy and the demographic variables were assessed using correlation analysis. Correlation is an inferential statistical technique that assists in developing an understanding of the behaviour of a population based on a representative sample (Ray, 2000). Correlation produces a mathematical index that describes the linear relationship between variables and was tested for significance at a 0.05 alpha level (Aron, Aron, & Coups, 2009). Walker and Maddan (2013) recommended correlation as an indication of the strength of associative relationships and direction. Size is indicated as a value between zero (0) and one (1), and direction was indicated by signage (Numpacharoen & Atsawarungruangkit, 2012). Positive relationships were indicated by increments in both variables whereas negative signs indicated inverse relationships (Ray, 2000). Significance was tested at a 0.05 alpha level. Field (2009) indicated that correlations were appropriate in the analysis of cross-sectional survey data, because causality is not inferred.

The type of variables determined the exact correlation to be used in the analysis. Self-efficacy was measured as a continuous variable. This was correlated with other continuous variables (e.g. Age, time since treatment) using the Pearson product moment (Walker & Maddan, 2013). Correlations between continuous variables (Self-efficacy) and true dichotomous variables (e.g. gender and lapse/relapse) were computed using the Point-biserial correlation (Mukaka, 2012). Clarke-Carter (2004) recommended the Biserial correlation coefficient when computing associations between a continuous variable (e.g. Self-efficacy) and an artificial dichotomous variable e.g. drug of Choice that was grouped into categories such as depressants.

3.12.4 Regression analysis

A multiple regression analysis was computed to assess predictive relationships between the identified variables. Aron et al.(2009) recommended regression as an appropriate statistical technique to determine whether significant predictive relationships exist. The regression model entered all identified variables simultaneously. Brace, Kemp, and Snelgar (2003) identified such an analysis as an omnibus test that can determine the unique contribution of each variable controlling for other predictors in the model. In other words, the predictors compete with each other in a multiple regression using the omnibus method (Field, 2009). The regression coefficients for the model and predictors were tested for significance at a 0.05 alpha level. The model regressed self-efficacy, age, gender, employment, drug of choice and time since treatment onto sobriety. This model was repeated with the four subscales of self-efficacy as proxies for self-efficacy at the outcome level. Thus in total five regression models were tested. Stevens (2009) advised that samples comprised of a minimum of 10 participants per predictor variable that will support regression analysis must be. The present study adopted the threshold of 10 participants per predictor to support the use of regression that meant that the threshold sample size was 60. The final sample included 105 participants that then supported regression models including a maximum of YY predictors. The Statistical Programme for Social Sciences (SPSS), version 23 was used to compute the abovementioned analyses.

3.13 Ethics

The researcher adhered to the ethics guidelines provided by the University of the Western Cape strictly to ensure that the humanity and rights of each participant was maintained throughout the research process. This study aimed to preserve the dignity of the respondents, and minimize the anxiety and discomfort that may have been created by the inquisitive nature of items on the scales used to elicit data.

Ethics clearance and project registration was obtained from the Senate Research Committee at the University of the Western Cape. Permission to conduct the study using the after care facilities was requested from the respective Directors of programme coordinators (Appendix D). Each participant received an information sheet (Appendix A) that contained a description of the aim of the study, what participation entailed and recourse in the event of dissatisfaction or questions subsequently. Participants gave informed consent by completing and signing a consent form (Appendix B). The researcher explained to participants that they had to withdraw from the study at any time without fear of negative consequence or loss of perceived benefits. Participants were reassured that they would remain anonymous at all stages of the research and that this would be achieved through the assignation of codes that were used instead of identifying information. Names were not requested as part of data collection. Identifying information would also not be included in the thesis, and any conference presentations or article published thereafter. Completed questionnaires and electronic data was securely stored as per UWC protocol and will be kept for a period of five years. Contact details for the national counselling call centre was given to participants for use in the event of psychological discomfort during or after the study.

CHAPTER FOUR

RESULTS

4.1 Pilot Study

4.1.1 Sample characteristics

The demographics of the sample in the pilot study are summarized in Table 4.1 below.

Table 4.1

Demographic profile of the sample (N=51)

Variable	<i>F</i>
Range	20 - 55
Average	34
Mode	23; 37
Male	29
Female	20
Non-conforming	2
Yes	27
No	15
Not reported	9

From the above table it becomes evident that the sample of participants in the pilot study were all adults and of consenting age. There appears to be a bimodal distribution with ages 23 and 37 as the most frequently occurring ages of participants. The frequency distributions are reflective of general intake populations and clinical populations in rehabilitation for substance. The majority of the sample was male (56%), even though the distribution was relatively equal. The majority of the sample was employed.

4.1.2 Internal consistency

Table 4.2 presents the results related to the reliability estimate for the AASE

Table 4.2

Chronbach alphas for the AASE (N=51)

	Items	Responses	Excluded	Cronbach's alpha
Overall scale	40	51	0	.886
Negative affect	10	51	0	.915
Physical and other concerns	10	51	0	.734
Social/ Positive	10	51	0	.851
Withdrawal and other urges	10	51	0	.847

From the above table it becomes evident that the AASE produced excellent coefficients for internal consistency as estimated by Chronbach's Alpha. The overall scale obtained a coefficient of .886 that suggests overall stability and appropriateness for use in psychological research. The Negative affect subscale obtained a coefficient of .915 which was excellent indicating that the subscale was reliable for this sample. The social/ positive, and withdrawal and other urges obtained coefficients of .851 and .847 respectively which also indicates high reliability in this sample. The subscale measuring physical and other concerns obtained a slightly lower coefficient of .734 that also suggests high reliability though it was lower than the other subscales. The above Cronbach's Alpha scores indicate that the AASE scale was a very reliable measure of abstinence self-efficacy in an inpatient group and thus would also be reliable for the intended target group that is derived from the pilot group.

4.2 Main study

4.2.1 Sample characteristics

The sample characteristics were summarized and presented in three separate tables for ease of presentation. Table 4.3 below provides the demographic profile of the sample.

Table 4.3

Demographic profile of the sample (N=105)

Variable		<i>F</i>
	Range	19 - 58
	Average	32
	Mode	23; 30
	Male	63
	Female	38
	Non-conforming	4
	Yes	34
	No	69
	Not reported	2

From the above table it becomes evident that 60% of the sample was male (n=63). The portion of the sample that was employed was less than in the pilot group and only reflected 32%.

4.2.1.1 Drug of Choice:

Table 4.4 below summarized information related to drug of Choice.

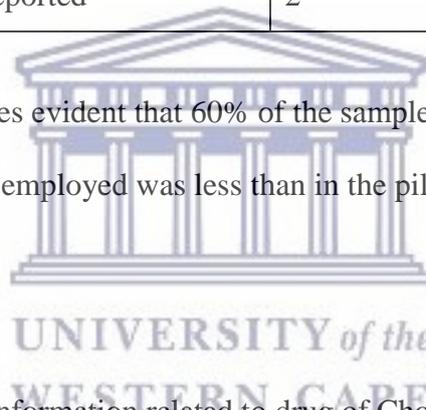


Table 4.4 Drug of Choice

Category	Drug	<i>f</i>	<i>Rank</i>
	Marijuana	10	9
	Hashish	34	4
	Heroin	42	2
	Opium	5	14
	Cocaine	11	8
	Amphetamine	23	5
	Methamphetamine	68	1
	MDMA	6	13
	Flunitrazepam (roofies)	3	6
	GHB	8	11
Dissociative drugs	Ketamine (Special K)	10	9
	Mescaline (Buttons)	35	3
	Psilocybin (Magic mushrooms)	13	7
	Anabolic Steroids	4	15
	Inhalants (Solvents)	15	6
Suppressants	Alcohol	7	12

From the table above, it become evident that Methamphetamine was by far the most frequently reported drug of choice. Heroin was the second most frequently reported drug of choice. Mescaline (Buttons) was third most frequently reported drug of choice. Cannabis was ranked fourth in this sample. The top four drugs of choice in this sample were reported far more frequently than other substances and are consisted with reports for the Western Cape.

4.2.1.2 Sobriety and relapse:

Table 4.5 summarized information related to drug use and sobriety. From the table below the mode for time since discharge was 5 months. The highest frequency reported for lapses was 2-3 times a month. The second highest frequency reported for lapses was 2-3 times a week. Almost a third of the sample reported never having a lapse during the first 12 months after treatment (n=31, 30%).

Table 4.5 Profile related to Sobriety and relapse.

The below table points to the relapse rate as reported by respondents.

Variable	Descriptive Statistic	
	Range	1 -12 months
	Average	7 months
	Mode	5 months
Variable	Descriptor	f
	Monthly	12
	2-3 times a month	27
	2-3 times a week	22
	More than 4 times week	13
	Never	31
	Monthly	12
	2-3 times a month	27
	More than 3 times week	24
	Weekly	25
	Less than a week	17
	Never	0
	Less than 1 month	25
	3 months	19
	6 months	36
	9 months	15
	12 months	10

It is evident from the table above, that the majority of the sample reported 6 months to be the longest period of sobriety. Approximately 10% of the sample was sober for a full 12 months. Almost a quarter of the sample (24%) reported that their longest period of sobriety was less than one month post discharge from a treatment centre.

4.2.2 Correlation

The results of the correlation matrix between self-efficacy and demographic variables were tabulated and presented in Table 4.6 below.

Table 4.6

Correlation Matrix for Self efficacy measures and Demographic Variables (N = 105)

		SE	Negative Affect	Physical and other concerns	Social/ Positive	Withdrawal Urges
Gender	Sig. (2-tailed)	-.364*	-.215*	.032	.241	.047
Age	Sig. (2-tailed)	-.238	.374	.045	.256	..278
Employment	Sig. (2-tailed)	.621**	.611**	.423*	.578*	.413*
Time since Tx	Sig. (2-tailed)	-.353*	-.374*	.639	.532.	.401
Longest period sober	Sig. (2-tailed)	.025	-.065	-.310*	-.127	.058

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed).

Self-efficacy was significantly correlated with two demographic variables at a .05 alpha level namely, Gender ($r = -.364$) and Time since treatment ($r = -.353$). The size of the coefficients indicated small correlations. The correlation indices were negative. This suggested that in early recovery female participants reported less belief in their ability to

abstain from substance use than male participants. Similarly, patients had greater belief in their ability to abstain from substance use closer to the completion of their treatment. The coefficients of determination indicated that 13.2% and 12.5% of the variance on sobriety was accounted for by gender ($r^2 = .132$) and time since treatment ($r^2 = .125$) respectively.

Self-efficacy was significantly correlated with Employment ($r = .621$) at a .01 alpha level. The size of the coefficients indicated a modest correlation. The correlation index was positive suggesting that in early recovery employed participants reported increased belief in their ability to abstain from substance use. The coefficient of determination indicated that 38.5% of the variance on sobriety was accounted for by gender ($r^2 = .385$).

Self-efficacy for managing negative emotions was significantly correlated with two demographic variables at a .05 alpha level namely, Gender ($r = -.215$) and Time since treatment ($r = -.374$). The size of the coefficients indicated small correlations. The correlation indices were negative. This suggested that in early recovery female participants reported less belief in their ability to manage negative emotions than male participants. Similarly, patients had greater belief in their ability to manage negative emotions closer to the completion of their treatment. The coefficients of determination indicated that 14.0% and 1.5% of the variance on sobriety was accounted for by gender ($r^2 = .140$) and time since treatment ($r^2 = .015$) respectively.

Self-efficacy to manage negative emotions was significantly correlated with Employment ($r = .611$) at a .01 alpha level. The size of the coefficients indicated a modest correlation. The correlation index was positive suggesting that employed participants reported increased belief in their ability to manage negative emotions. The coefficient of determination indicated that 37.3% of the variance on sobriety was accounted for by gender ($r^2 = .374$).

Self-efficacy for managing physical and other complaints was significantly correlated with two demographic variables at a .05 alpha level namely, Employment ($r = -.423$) and Longest period sober ($r = -.310$). The size of the coefficients indicated small correlations. The correlation indices were positive in nature. This suggested that in early recovery employed participants reported more belief in their ability to manage physical and other complaints. Similarly, the longer patients were sober, the more belief they reported in their ability to manage physical and other complaints. The coefficients of determination indicated that 17.9% and 9.6% of the variance on sobriety was accounted for by employment ($r^2 = .179$) and period of sobriety ($r^2 = .096$) respectively.

Employment was significantly correlated with self-efficacy for social/ positive interaction ($r = .578$) and self-efficacy for managing withdrawal and other urges ($r = .413$) at a .05 alpha level. The size of the coefficients indicated small correlations. The correlation indices were positive in nature. This suggested that employed participants reported more belief in their ability to manage social or positive interaction, as well as their belief to manage withdrawal and other urges. The coefficients of determination indicated that 33.4% and 17.0% of the variance on employment was accounted for by self-efficacy for social/ positive interaction ($r^2 = .334$) and self-efficacy for managing withdrawal and other urges ($r^2 = .170$) respectively.

4.2.3 Regression Analyses

Table 4.7 provides a summary of the results of the five regression analyses.

Table 4.7

Regression Analysis for Self-efficacy measures and Sobriety (N = 105)

Model	Predictors	Outcome	R ²	b
1	Self-efficacy Age Gender Time since treatment Drug of Choice Employment	Sobriety	.283*	.031* .152 -.154 -.261* .013 .134*
2	Negative Affect Age Gender Time since treatment Drug of Choice Employment	Sobriety	.140*	.132* .020 -.234 .253 .116 .210*
3	Physical and other complaints Age Gender Time since treatment Drug of Choice Employment	Sobriety	.023	.036 .031 .012 .126 .043 .213*
4	Social/ Positive Age Gender Time since treatment Drug of Choice Employment	Sobriety	.017	.304 -.003 -.030 .019 .013 .152
5	Withdrawal and other urges Age Gender Time since treatment Drug of Choice Employment	Sobriety	.174*	.384* .013 .072 .326 .180 .278*

* $P < .05$ ** $P < .01$

4.3.1 Model 1

Model 1 regressed the self-efficacy, age, gender, employment, drug of choice and time since treatment onto Sobriety. The model tested significant at a .05 alpha level. This model explains 28% of the variance on sobriety. From this model, self-efficacy, time since treatment and employment were significant predictors of sobriety, controlling for gender, age, and drug of choice. For every one unit increase in scores for self-efficacy, there was a corresponding increase of .031 units in sobriety controlling for the other predictors in the

model ($b=.031, p<.05$). Thus, the belief that you are able to manage abstaining from drug use significantly predicted increased sobriety controlling for the other variables in the model. For every one unit increase in scores for time since treatment, there was a corresponding decrease of .261 units in sobriety controlling for the other predictors in the model ($b=-.261, p<.05$). Thus, proximity to completion of treatment significantly predicted increased sobriety controlling for the other variables in the model. For every one unit increase in scores for employment, there was a corresponding increase of .134 units in sobriety controlling for the other predictors in the model ($b=.134, p<.05$). Thus, being gainfully employed significantly predicted increased sobriety controlling for the other variables in the model.

4.3.2 Model 2

Model 2 regressed negative affect, age, gender, employment, drug of choice and time since treatment onto Sobriety. The model tested significant at a .05 alpha level. This model explains 14% of the variance on sobriety. From this model, self-efficacy in managing negative affect and employment were significant predictors of sobriety, controlling for gender, age, time since treatment and drug of choice. For every one unit increase in efficacy for negative affect, there was a corresponding increase of .132 units in sobriety controlling for the other predictors in the model ($b=.132, p<.05$). Thus, the belief that you are able to manage negative affect significantly predicted increased sobriety controlling for the other variables in the model. For every one unit increase in scores for employment, there was a corresponding increase of .210 units in sobriety controlling for the other predictors in the model ($b=.210, p<.05$). Thus, gainful employment significantly predicted increased sobriety controlling for the other variables in the model.

4.3.3 Model 3

Model 3 regressed physical and other complaints, age, gender, employment, drug of choice and time since treatment onto Sobriety. This model explains 2.3% of the variance on sobriety, but did not test significant ($p > .05$). The null findings here indicate that the combination of variables in this model did not provide a significant explanation of the variance on sobriety.

4.3.4 Model 4

Model 4 regressed social/ positive, age, gender, employment, drug of choice and time since treatment onto Sobriety. This model explains 1.7% of the variance on sobriety, but did not test significant ($p > .05$). The null findings here indicate that the combination of variables in this model did not provide a significant explanation for the variance on sobriety

4.3.5 Model 5

Model 5 regressed withdrawal and other urges, age, gender, employment, drug of choice and time since treatment onto Sobriety. The model tested significant at a .05 alpha level. This model explains 17.4% of the variance on sobriety. From this model, belief in one's ability to manage withdrawal and other urges, and employment were significant predictors of sobriety, controlling for gender, age, time since treatment and drug of choice. For every one unit increase in efficacy for managing withdrawal and other urges, there was a corresponding increase of .384 units in sobriety controlling for the other predictors in the model ($b=.384$, $p<.05$). Thus, the belief that you are able to manage withdrawal and other urges significantly predicted increased sobriety controlling for the other variables in the model. For every one unit increase in scores for employment, there was a corresponding increase of .278 units in sobriety controlling for the other predictors in the model ($b=.278$, $p<.05$). Thus, the being

gainfully employed significantly predicted increased sobriety controlling for the other variables in the model.



CHAPTER FIVE

DISCUSSION

5.1 Findings

This study set out to measure self-efficacy in people recovering from substance use disorders and assess the associative and predictive relationships with demographic variables and sobriety outcomes. The below section discusses the results gained from the data collection phase of this study and compares it to other studies conducted in the substance abuse domain.

5.1.1 Profile

A total of 105 people who met the minimum criteria for inclusion were recruited to participate in the present study. All participants were adults as per the minimum age threshold of 18 years old. Participants were residents of the Western Cape who had completed inpatient treatment 12 months or less prior to assessment, and were able to complete the instruments in English. A majority of the participants were male (60%), the remainder were female (36%) and non-conforming to gender binaries (4%). This gender distribution is mismatched to the general population distribution of the province, where females are significantly more than males (Western Cape Government, 2016). However, this distribution matches the substance abuse treatment data collected by SACENDU; there is a consistent pattern of gender disparity with men (73%) always outnumbering women (23%) in admissions and readmissions (Dada et al, 2015; Dada et al, 2017).

The youngest participant in the sample was 19 years old and the oldest was 58 years old. The average age for the sample was 32, with ages 23 and 30 being the most frequently occurring within the sample. This age profile matches provincial population estimates that two thirds of the province is aged between 15 and 64 years that places 60% of the residents of

the Western Cape under the age of 35 (Western Cape Government, 2016). The distribution was similar to that of the 2016 SACENDU report showing that 50-55% of patients admitted for substance use disorder treatment between 2014 and 2016 were aged between 15 and 30 years (Dada et al, 2017). Strebel et al (2013) reported similar age profiles in the substance use population.

Results showed that methamphetamine (65%) was the most commonly used primary substance of choice. This finding was consistent with Dada et al (2017) that identified Methamphetamine as the most frequently used drug in the Western Cape in the SACENDU report, and with Sorsdahl et al. (2012). Heroin was ranked second (40%) in the present study. Similarly, Peltzer et al (2010) identified Methamphetamine and Heroin as primary drugs. Mescaline or buttons ranked third (35%) and Hashish ranked fourth (34%). Both these substances were identified among the top drugs of choice in South Africa and the Western Cape (Dada et al., 2017; Peltzer et al., 2010).

Alcohol was only ranked 12th out of 15 possible ranks and was only reported by 7% (n7) participants as a primary substance of abuse. The results was similar to the literature where Alcohol use disorder was reported to be more prevalent in other provinces; Eastern Cape, Free State, North West and Northern Cape (Dada et al, 2015). Peltzer et al (2010) also made the distinction that Alcohol was overall ranked lower as drugs of choice, but still remained the most common legally substance. Thus it is important to note that Alcohol is ranking with illicit drugs.

The results in the present study indicated that 30% of the sample participants had never relapsed since they had been discharged from treatment. Participants reported that their average longest period of uninterrupted sobriety was 7 months; 10% responded that they had been able to remain sober for the full twelve months; 34% had made it to the 6-month mark without relapsing and 23% of the participants relapsed shortly after the first month. The

results in the present study was consistent with literature indicating that the risk of relapse was between 60 and 70% which means that around 30% successfully manages the early recovery period (Connors & Maisto, 2006; Kadam et al, 2017). For those who had multiple relapses, the modal pattern of use was to consume drugs and/or alcohol two or three times monthly which was consistent with trends reported in the literature (White, 2007 Jung, 2001)

5.1.2 Associative relationships

An analysis of correlations between abstinence self-efficacy and demographic factors: gender, age, time was carried out. There was no statistically significant relationship between age and self-efficacy. The age of the respondent was not significantly associated to their levels of self-efficacy. This finding is at odds with Guzman-Facundo & Pedrao (2008) whose study revealed low self efficacy, male gender and mental health problems such depression interact with age, making younger males more prone to relapse.

Self-efficacy was found to have moderate, inverse relationships with gender and time elapsed since discharge from the inpatient facility. Females generally had lower abstinence self-efficacy shortly after discharge when compared to males and it continued to decline. This means their beliefs about their ability to abstain and cope with drug related cravings and triggers was diminished much earlier than in males, this leaves them prone to relapse. Jain (2015) posited an explanation for the gender disparity in substance abuse management for women. It was noted that biological and socio cultural processes driving addiction, sobriety and relapse differ in women (Wechsberg et al, 2013). Similarly the creation of high self-efficacy through mastery experiences and positive social influences maybe quite different in women than in men (Bandura, 1982).

Abstinence self-efficacy declines with the passage of time, hence the more time elapsed since discharge from inpatient care the lower that person's abstinence self-efficacy will be. Many studies shared this finding that abstinence self-efficacy is high during treatment and shortly after discharge and then it declines with time (Burlinson & Kaminer, 2005; Dolan, Martin & Rohsenow, 2008; Lozano & Stephens, 2010).

Self-efficacy was positively correlated to employment; finding a job after treatment should boost abstinence self-efficacy and returning to work following treatment would boost or at least maintain the self-efficacy levels attained during treatment. Findings from Melvin, Davis & Koch (2012) highlighted the importance of vocational counselling during treatment and thereafter the need for structured and compensated work activities for people in recovery. Jason, Olson & Harvey (2015) conducted a study that also showed lower relapse rates and better recovery outcomes for people who lived in sober living homes and were employed. These people reported higher levels of abstinence self efficacy and very low relapse rates.

Another set of positive associations was found between employment and social/positive interaction and employment and withdrawal urges. Results of this study show that in early recovery, employed male participants reported more belief in their ability to manage social or positive interaction, as well as their belief to manage withdrawal and other urges. Similarly, Kadden & Litt (2015) found that increased social coping skills and decreased psycho-emotional distress had a mediating effect on abstinence self-efficacy.

Male participants had higher levels of abstinence self-efficacy in terms of coping with negative emotions in early recovery. They believed they had a greater capacity to cope with negative emotions in the early stages of recovery. This is a common finding that abstinence self-efficacy levels remain high shortly after treatment and thus positively augment sobriety during the first few months (Crouch, DiClemente & Pitts, 2015; Kim, 2012; Majer, Chapman

& Jason, 2016). However, a lack of the continuous care/ treatment, sobriety support and employment required to boost the initial surge of abstinence self-efficacy; these gains fall flat and the individual risks relapse as abstinence self-efficacy levels steadily decline with time. The results of this study reflect that time elapsed had a dampening effect on females self-efficacy cognitions in relation to their capacity to cope with negative emotions. Greenfield, Venner, Kelly, Slaymaker & Bryan (2012) also noted the dampening effects of time elapsed and negative emotions, focusing specifically on the negative impact, negative affect has on general self efficacy.

A different pattern emerged in terms of self-efficacy for managing physical complaints and discomfort. The results show that participants had greater belief in their ability to manage physical and other complaints, the longer they were sober and employed. Thus, physical discomfort self-efficacy levels are increased by longer durations of sobriety. This is in line with Bandura (1977) and Kim (2012) depiction of self efficacy as a domain specific construct, allowing us to observe interactions between the domains. In this regard, coping self-efficacy has a mediating function in the relationship between abstinence self efficacy and physical discomfort/ withdrawal urges.

5.1.3 Predictive relationships

Results from the regression analysis confirm that high levels of abstinence self-efficacy do predict sobriety. Inversely it is also true that prolonged periods of sobriety increase abstinence self-efficacy (Kadden & Litt, 2011). This is because abstinence in itself is a mastery experience and it gives the individual the impression that sobriety is 'do-able'. Other factors that have been confirmed to have a significant influence on sobriety are gainful employment and a successful recovery duration (time elapsed since treatment discharge). A successful

recovery duration accumulates experiences of mastery that increase abstinence self-efficacy and in turn help maintain sobriety (Bandura, 2004).

Jason, Olson & Harvey (2015) and Jason, Salina & Ram (2016) compared recovery populations living in normal care, therapeutic communities and sober living houses and found that when controlling for the sober environment, employment was still the second greatest predictor of sobriety. In the same vein Majer, Chapman & Jason (2016) showed that recovery conditions mitigate the interplay between self-efficacy and sobriety. Abstinence self-efficacy has a larger predictive effect on sobriety in recovery settings that provide elements that constantly boost self-efficacy (Moos & Moos, 2007; Chavarria, Stevens, Jason & Ferrari, 2012).

Two elements in the broader definition of abstinence self-efficacy stand out as additional predictors of sobriety. These are; a) self-efficacy for coping with negative emotions and; b) self-efficacy for coping with withdrawal and other urges. Combined with employment, the above two elements can predict sobriety. This finding matches Kim (2012) who outlined two different coping pathways for people in recovery. Stating that prolonged periods of sobriety were linked to positive coping methods that involved a task oriented approach that forced recovering addicts to view urges, discomfort and temptation as tasks that can be overcome. This seemed to be a better approach than the avoidance/ emotion oriented approach that attached negative affect to withdrawal urges, thus creating a trigger point for potential relapse.

5.2 Conclusion

The findings of the present study were intuitive and largely resonated with the trends reported in the literature. Early recovery is characterised by a higher level of optimism and belief in abstinence self-efficacy in the earlier phase. This can be attributed to the positive emotion and

sense of mastery following the successful completion of treatment. As the recovery period progresses, resumption of life brings all kinds of challenges that erode the impact of treatment completion. The findings in the present study identified that self-efficacy for coping with negative emotions and self-efficacy for coping with withdrawal and other urges were significant predictors of sobriety in combination with other factors such as employment, gender and time lapsed. Thus including the development or strengthening of self-efficacy during treatment and in aftercare or early recovery, might significantly increase the probability of sobriety. The results underscore the importance of the complex interplay between internal risk factors like self-efficacy and external ones like employment.

5.3 Limitations of Study

This study is limited by the fact that it is a cross sectional study, results reflect sample characteristics at the time of data collection, past and future events are not accounted for. The present study uses a relatively small sample size and collects data from one geographical area that limited the extent to which generalisation of findings to similar populations in other parts of the country could be made. The present study relied on self-report to measure reported lapses. The honesty of the respondent thus becomes an important factor on which the accuracy of the data relied. The instrument did not include a psychometric measure to assess for social desirability, response patterns or misrepresentation/ lying. The pressure to provide socially desirable responses in this target group could have been a source of variance that was difficult to assess or control for. Similarly, malingering, lying and misrepresentation has been reported in the target group as a clinical concern. The lack of control for this was a concern and would mean that results must be interpreted tentatively.

The pilot study was conducted with an inpatient group and not a post treatment or early recovery group. The pilot sample was similar to the recovery group in demographic terms and ultimately the recovery group emerges out of the inpatient community.

This study did not delineate differences in intervention programs or account for the resultant effects on self-efficacy. This potentially could have been a source of variance that impacted the results of the study. The assumption that completion of treatment was sufficient as an inclusion criterion limited sophisticated analysis incorporating the modality and duration of treatment. The present study treated the recovery group as a homogenous group given the exploratory nature of the study that in retrospect reduced the complexity of the phenomenon.

5.4 Recommendations for further study

In future, there are certain aspects of this study that could be expanded or revised to provide a more robust picture of internal risk factors in relapse and how they affect recovery in the Western Cape. Firstly, cohort studies over a three or five year period with bi annual data collection points would provide a more accurate temporal view. Secondly, future studies should incorporate one or two more internal risk factors in addition to self efficacy. Literature showed that self efficacy does not work alone in recovery, motivation, self esteem and emotional regulation contribute too. The interaction of these factors in recovery should be explored further.

Third, the demographic scope can be expanded to include information like ethnicity, marital status, education level, age of first use, and other chronic health conditions. Findings can be compared to national statistics and results from other similar studies. In addition, information about the actual treatments completed should also be included.

Finally, for future research and clinical work purposes, the research instrument adapted in the current study should be translated to all the national languages of South Africa. This eliminates language as a barrier to participation.

5.5 Significance of Study

The findings of this study build onto existing literature and contribute to current knowledge on relapse prevention and recovery management. At the personal level, the outcome of this study is vital to two groups; a) people with substance use disorders and b) people with family and friends who have substance use disorders. This study may help normalise relapse, eliminate the shame and isolation that relapse creates and shed light on positive coping methods that should be used. Knowing what recovery capital is, how to build and boost it so as to avert relapse can change the type of conversations that; a) substance dependent individuals have with themselves in relation to their treatment progress, and; b) other members of society have with themselves regarding their perceptions of addiction and how they respond to people who have these afflictions.

On a professional level, this study could influence a shift in health care workers' beliefs regarding substance abuse. A shift towards incorporating and enacting harm reduction strategies as a failsafe for patients in the event of a relapse or multiple relapses. The ubiquitous nature of relapse should reinforce the need for good health and safety over abstinence.

At a legislative level, this study motivates for the identified gaps in policies and infrastructure to be addressed and implemented so that the benefits trickle down to those who need it the most. Clear deficits were identified in relation to; a) disconnected health care services that don't offer clear transition from inpatient care to aftercare; b) shortages and inequity in substance abuse treatment and after care; c) lack of harm reduction policies; d) shortage of recovery homes; e) lack of basic employment provisions for people in recovery.

Finally, at a methodological level this study contributed to knowledge of the psychometric properties of the research instrument for use in the South African context. The high internal

consistency reported provides empirical evidence for the reliability of the scale and supports its use in treatment, aftercare and health research.



APPENDIX A: INFORMATION SHEET



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa.

Tel: +27 21-959, Fax: 27 21-959

INFORMATION SHEET

This serves to inform you about and invite you to participate in a study being conducted at the University of the Western Cape about Self efficacy levels during the first twelve months after treatment for substance abuse.

Researcher: Ms. G. E. Malanguka

Supervisor: Mr.K. Kamaloodien

Co-Supervisor: Dr. M. Smith

Department: Psychology



UNIVERSITY of the
WESTERN CAPE

Dear Participant,

I am conducting this research project in partial fulfilment of the requirements for the Clinical Psychology Masters program at the University of the Western Cape. This study aims to compare differences in self efficacy levels in people who have received treatment for substance abuse over the past twelve months. Recent national statistics show that the Western Cape has some the highest substance abuse rates in the country. Your participation in this study will be of great importance as it will contribute to current knowledge on processes and experiences of people who have been rehabilitated and are trying to remain abstinent from alcohol and drugs. This study is expected to inform future after care and post treatment interventions for residents of the province.

Participation in this study is purely voluntary and you reserve the right to withdraw from the study at any time you wish, without negative consequences. You will not be requested to give your name or any other personal identification information; hence, your participation will remain anonymous. The study comprises two questionnaires which will take about 20-25

minutes to complete. If you so wish, you will have access to the final report of this study once it is completed.

Your participation will be highly appreciated.

Regards,

The Researcher



APPENDIX B: CONSENT FORM



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

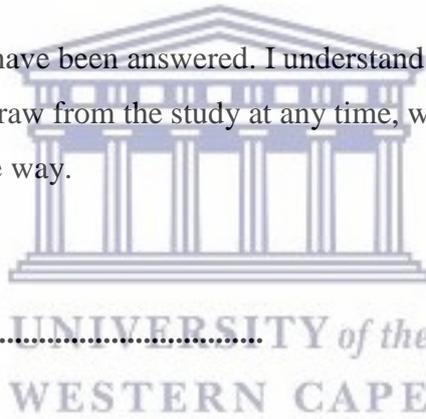
Tel: +27 21-959, Fax: 27 21-959

CONSENT FORM

Title of Research Project: Recovery after completion of inpatient substance abuse treatment program in the Western Cape: An exploratory study on self efficacy differences.

The study has been described to me in a language I understand and I freely and voluntarily agree to participate.

My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study at any time, without giving reasons and this will not affect me in a negative way.



Participant's Signature:.....

Date:.....

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the researcher.

Researcher: G. E. Malanguka

Cell: 0761271702

Email: 3356193@uwc.ac.za

APPENDIX C: DATA COLLECTION INSTRUMENT



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959, Fax: 27 21-959

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PARTICIPANT CODE:

SECTION 1: DEMOGRAPHIC DATA SHEET

Please fill in the following information.

Age:..... Gender:..... Location:

Date:..... Are you employed?:.....

What is your drug of choice (main reason for treatment):

When did you get discharged from the rehabilitation centre?
(month).....(year).....

1. In the past 12 months have you used alcohol or drugs?
0 Never
1 Monthly
2 2-3 times a month
3 2-3 times a week
4 More than 4 times week
2. During the past 12 months have you found that you were not able to stop using drugs and alcohol once you started?
0 Never
1 Monthly
2 2-3 times a month
3 Weekly
4 More than 3 times week
3. In the past 12 months, what is the longest period that you stayed without using drugs and alcohol?

- 0 Never
- 1 Less than a week
 - 2 Less than 1 month
 - 3 3 months
 - 4 6 months
 - 5 9 months
 - 6 12 months

SECTION 2: ADAPTED ABSTINENCE SELF EFFICACY SCALE

Listed below are a number of situations that lead people to use alcohol and drugs. I would like to know how **tempted** you may be to use drugs in each situation. Place an X in the box to indicate your answer. Select the answer that best describes current feelings of temptation in each situation.

Please Note: The term “drug” refers to Alcohol as well as other drugs.

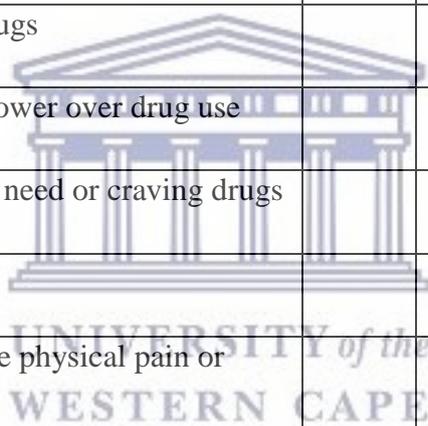
SITUATION	TEMPTED				
	Not at all	Not very	Mod-erately	Very	Extre-mely
When I'm in agony because of stopping or withdrawing from drug use					
When I have a headache					
When I am feeling depressed					
When I am on vacation and want to relax					
When I am concerned about someone					
When I am very worried					
When I have the urge to try drugs just once					
When I am offered drugs at social events					
When I dream about using drugs					

When I want to test my willpower over drinking and drugging					
When I am feeling a physical need or craving for drugs					
When I am physically tired					
When I am experiencing some physical pain or injury					
When I feel like blowing up because of frustration					
When I see others using drugs at a bar/ party					
When I sense everything is going wrong for me					
When people I used to drug with encourage me to use drugs					
When I am feeling angry inside					
When I experience an urge/ impulse to use drugs, and it catches me unprepared					
When I am excited or celebrating with others					

Listed below are a number of situations that lead people to use alcohol and drugs. I would like to know how confident are you, that you **would not** use drugs in each situation. Place an X in the box to indicate your answer. Select the answer that best describes current feelings of temptation in each situation.

SITUATION	CONFIDENCE				
	Not at all	Not very	Mod-erately	Very	Extre-mely

When I'm in agony because of stopping or withdrawing from drug use					
When I have a headache					
When I am feeling depressed					
When I am on vacation and want to relax					
When I am concerned about someone					
When I am very worried					
When I have the urge to try drugs just once					
When I am offered drugs at social events					
When I dream about using drugs					
When I want to test my willpower over drug use					
When I am feeling a physical need or craving drugs					
When I am physically tired					
When I am experiencing some physical pain or injury					
When I feel like blowing up because of frustration					
When I see others using drugs at a bar/ party					
When I sense everything is going wrong for me					
When people I used to drug with encourage me to use drugs					
When I am feeling angry inside					
When I experience an urge/ impulse to use drugs, and it catches me unprepared					



When I am excited or celebrating with others					
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UNIVERSITY *of the*
WESTERN CAPE

APPENDIX D: PERMISSION REQUEST LETTER



UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa.

Tel: +27 21-959, Fax: 27 21-959

REQUEST FOR PERMISSION TO CONDUCT STUDY

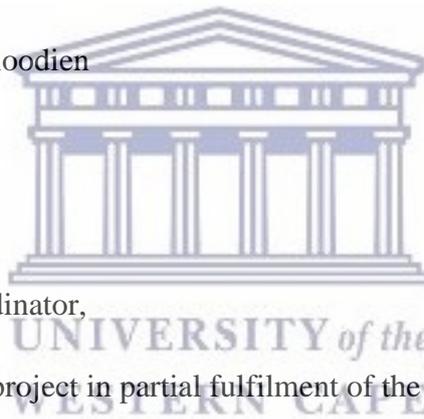
This serves to inform you about and request permission to collect data for a study being conducted at the University of the Western Cape about Self efficacy levels during the first twelve months after treatment for substance abuse.

Researcher: Ms. G. E. Malanguka

Supervisor: Dr. M. Smith

Co-Supervisor: Mr. K. Kamaloodien

Department: Psychology



Dear Manager/ Program Coordinator,

I am conducting this research project in partial fulfilment of the requirements for the Clinical Psychology Masters program at the University of the Western Cape. This study aims to compare differences in self efficacy levels in people who have received treatment for substance abuse over the past twelve months. Recent national statistics show that the Western Cape has some the highest substance abuse rates in the country. Prospective findings from this study will be of great importance as they will contribute to current knowledge on processes and experiences of people who have been rehabilitated and are trying to remain abstinent from alcohol and drugs. This study is expected to inform future after care and post treatment interventions for residents of the province.

My target population is all adult residents of the Western Cape province who have been in treatment for alcohol or drug dependence in the past twelve months. Participation in this study is purely voluntary and participants reserve the right to withdraw from the study at any time they wish, without negative consequences. Participants will not be requested to provide names

or any other personal identification information; hence their participation will remain anonymous. The study comprises two questionnaires which will take about 20-25 minutes to complete.

I have attached a detailed abstract and a sample of my instrument for your perusal. Please make time to read through the attached abstract and sample instrument, and inquire further or respond.

Your cooperation in this regard will be highly appreciated.

Regards,

The Researcher



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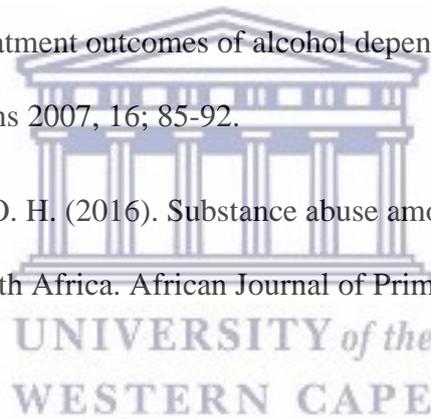
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