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# The impact of adolescence initiated alcohol and cannabis abuse/ dependence on the level of activity participation in adult males suffering from a pyschotic disorder

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# *THE IMPACT OF ADOLESCENCE INITIATED ALCOHOL AND CANNABIS ABUSE/DEPENDENCE ON THE LEVEL OF ACTIVITY PARTICIPATION IN ADULT MALES SUFFERING FROM A PSYCHOTIC DISORDER.*

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for

the degree of

Master of Science in Occupational Therapy

Johannesburg, 2014.

# *Declaration*

I, Kristyn Wolhuter, declare that this research report is my own work. It is being submitted for the degree of Master of Science in Occupational Therapy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

.....[Signature of candidate]

28 day of August [month], 2014

## *Dedication*

For all the women in my family.... To my mother, sister, aunt and grandmother.

# *Abstract*

**Title:** The impact of adolescence initiated alcohol and cannabis abuse/dependence on the level of activity participation in adult males suffering from a psychotic disorder.

**Background:** Individuals suffering from both a psychotic disorder and a substance abuse disorder have shown to have poorer occupational outcomes. This study aimed at determining the exact consequences of substance abuse on occupational performance in order to tailor more specific treatment interventions in the future.

**Methodology**: A non-experimental design and observational study was used. This involved a once off occupational therapy assessment using the Activity Participation Outcome Measure (APOM) as the recoding tool. The participants were divided into three groups: Alcohol abuse, cannabis abuse and no substance abuse.

**Results:** A statistically significant difference was noted between the alcohol and cannabis groups. The alcohol group achieved a higher level of activity participation in all eight APOM domains (Role performance, life skills, communication, motivation, process skills, self esteem, balanced lifestyle, and affect). The no substance abuse group (individuals diagnosed with schizophrenia) showed the lowest level of activity participation.

**Conclusion:** Cannabis adolescent abuse/dependence appears to have a more negative impact on activity participation when compared to alcohol abuse.

## *Acknowledgements*

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## *Nomenclature*

**Occupational Performance:** Occupational performance involves the dynamic interaction between the person, his/her occupations and the environment. It refers to the hierarchy of roles or activities which organises the individual's daily occupations. (17)

**Activity Participation:** Involvement in a life situation through performing a class of human actions which are goal directed. Three sub constructs present this construct namely client factors, occupational performance skills and well-being. (79)

**Activity Participation Outcome Measure (APOM):** Occupation based outcome measure used to record an individual's level of activity participation. (79)

**Montreal Cognitive Assessment of Minnesota (MOCA):** Bed side screening tool used to assess an individual's basic cognitive abilities. (77)

**Substance:** A substance refers to a psychoactive agent which is either ingested orally, intravenously or inhaled and is used for non-medical indications. (6)

**Substance Abuse/Dependence:** Substance abuse and dependence are defined as both involving a maladaptive pattern of substance use leading to clinically significant impairment or distress. (6)

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# *CHAPTER 1 Introduction*

## *1.1 Introduction*

The psychiatric unit at Chris Hani Baragwanath Academic Hospital (CHBAH) is involved in treating individuals presenting with a variety of psychiatric diagnoses. It is an acute state psychiatric unit accommodating 100 – 150 patients and the referral patterns show that approximately 30 to 40 of these patients attend occupational therapy per week. In this setting, the most common diagnoses observed within the male patient population are either a primary psychotic disorder or a substance induced psychotic disorder. Approximately 50% of patients present with a combination of the above disorders and are therefore classified as having a dual diagnosis. Patients suffering from a dual diagnosis within this setting have been observed to be typically male and presenting to the psychiatric unit at approximately 20 to 25 years of age. Alcohol and cannabis abuse have been observed to be the most common and most debilitating amongst the CHBAH attending patients.

The Zamani Clinic at CHBAH is dedicated to assisting these patients to stabilise both their psychiatric disorder through psychotropic medication as well as assisting through various psychological and occupational interventions, to abstain from substances and alcohol. Clinical experience has shown a high relapse rate amongst these patients, poor compliance to medication, poor compliance to both psychological and occupational interventions and a noticeable deterioration in occupational performance within all of the areas of occupational performance.

The literature has also been documented that patients suffering with a dual diagnosis have been shown to have poorer occupational outcomes, an increase in psychotic symptoms, poorer treatment compliance, increased violence, increased hospitalization and a higher rate of relapse and non compliance as compared to individuals with a purely psychiatric or substance abuse disorder. (1, 2) Numerous studies have documented the decline in neurocognitive functioning and relapse rate, (3, 4) but the impact on other

areas of activity participation such as forming interpersonal relationships, life skills, coping skills, self esteem, vocational skills and the ability to maintain a balanced lifestyle are not well documented.

Limited documented evidence based research into the wide range of negative consequences of the certain substances when used in combination with the presence of a psychiatric diagnosis, has restricted the full understanding of dual diagnosis and may be hindering the development of specific and integrated intervention programmes. This may be contributing to the high rate of relapse, poorer occupational outcomes noted in this population and documented literature. Without integrated and specific intervention programmes, individuals suffering from a dual diagnosis may not be receiving optimal, holistic treatment which will further compromise their prognosis and ability to return to their baseline level of functioning. A first step in remediating the various challenges and targeting specific interventions in a specialist clinic, is to document areas of deficit that need to be focused on.

## *1.2 Research Question*

Does the initiation of alcohol or cannabis abuse/dependence during the adolescent years, have an impact on the level of activity participation into adulthood in individuals suffering from a psychotic disorder, at Chris Hani Baragwanath Academic Hospital?

## *1.3 Aim*

To determine the impact of adolescence initiated alcohol and cannabis abuse/dependence on the level of adult activity participation in males between the ages of 19-29 years diagnosed with a psychotic disorder.

## *1.4 Null Hypothesis (H0)*

There is no impact of alcohol/cannabis use on the level of activity participation of adult men suffering from a psychotic disorder who initiated substance use in adolescence.

## *1.5 Objectives*

- To determine and describe the level of activity participation in adult males (19-29 years) presenting with the following three disorders:
    - A psychotic disorder,
    - Adolescent-initiated alcohol abuse/dependence with psychosis.
    - Adolescent- initiated cannabis abuse/dependence with psychosis.
- To compare the impact of alcohol and cannabis abuse/dependence on activity participation in adult males (19-29 years) presenting with a psychotic disorder to psychotic disorders without substance-initiated abuse/dependence.

## *1.6 Justification of Study*

The focus of this study was to assess the impact of substance use, initiated in adolescence, on activity participation in men with a dual diagnosis. Evidence of the negative consequences of substances on all areas of occupational performance could enhance occupational therapists' understanding of dual diagnosis. The main purpose of having an evidence based understanding of the consequences of substance abuse is to assist occupational therapists addressing treatment aspects such as insight and compliance and developing interventions, which can be more specific to this particular population's needs. This research is intended to produce improved functional and clinical outcomes for this population.

## *1.7 Organization of Report*

This report has been organized into five chapters. The first chapter is titled the introduction and describes the background to the research aim, the research question and objectives put forward by the researcher. Chapter two is the literature review and presents the recent findings and developments within the field of psychosis and substance abuse. Chapter three describes the methodology and the process which the

researcher followed in order to accurately answer the research question. Chapter four reports the results that were determined from the study. Chapter five the discussion puts forward the impact of the results on clinical practice and chapter six concludes the major findings and implications of the study.

## *1.8 Conclusion*

The main research question and objectives of the study have been described in chapter one. The following chapter will discuss the major trends and developments noted within the literature surrounding psychosis, substance abuse and the impact on level of functioning. This will aim to provide a context in which this study is based.

# CHAPTER 2 Literature review

## 2.1 Introduction

Substance abuse among adolescents has been a public health problem for decades with alcohol and cannabis being shown to be the most common substances abused within the South African population. General use of substances is usually triggered by experimentation and this leads to the abuse of the substance. Abuse of a substance is where the individual continues to use the substance, despite knowing the harmful and dangerous effects of the substance (5, 6). The concern for health care providers is that these individuals who experiment with substances are at risk to develop substance induced mood/psychotic disorders. Many psychiatric hospitals with acute units, report a high number of substance use disorders between the ages of 19 – 29 years (5).

This chapter reports on the challenges in distinguishing between substance use disorders, concerns regarding adolescent development, consequence on activity participation and treatment interventions with regard to alcohol and cannabis abuse/dependence.

## 2.2 Statistics on Substance Abuse in South Africa

Statistics published in the United Nations World Drug Report 2011 indicated South Africa as being one of the drug capitals of the world (7). Drug consumption is twice that of the world norm, with 15% of the population having a drug problem. The report indicated that tobacco, alcohol and cannabis were the most common substances abused within the South African population. The use of cannabis has increased by 20%. In 2006 2.52 million people used cannabis and this increased to 3.2 million in 2008 (7). Drug abuse is costing the government approximately R20-billion a year and could pose a bigger threat to the country's future than the Aids pandemic (7). According to South African Police Service, 60 percent of crimes nationally were related to substance abuse. (7)

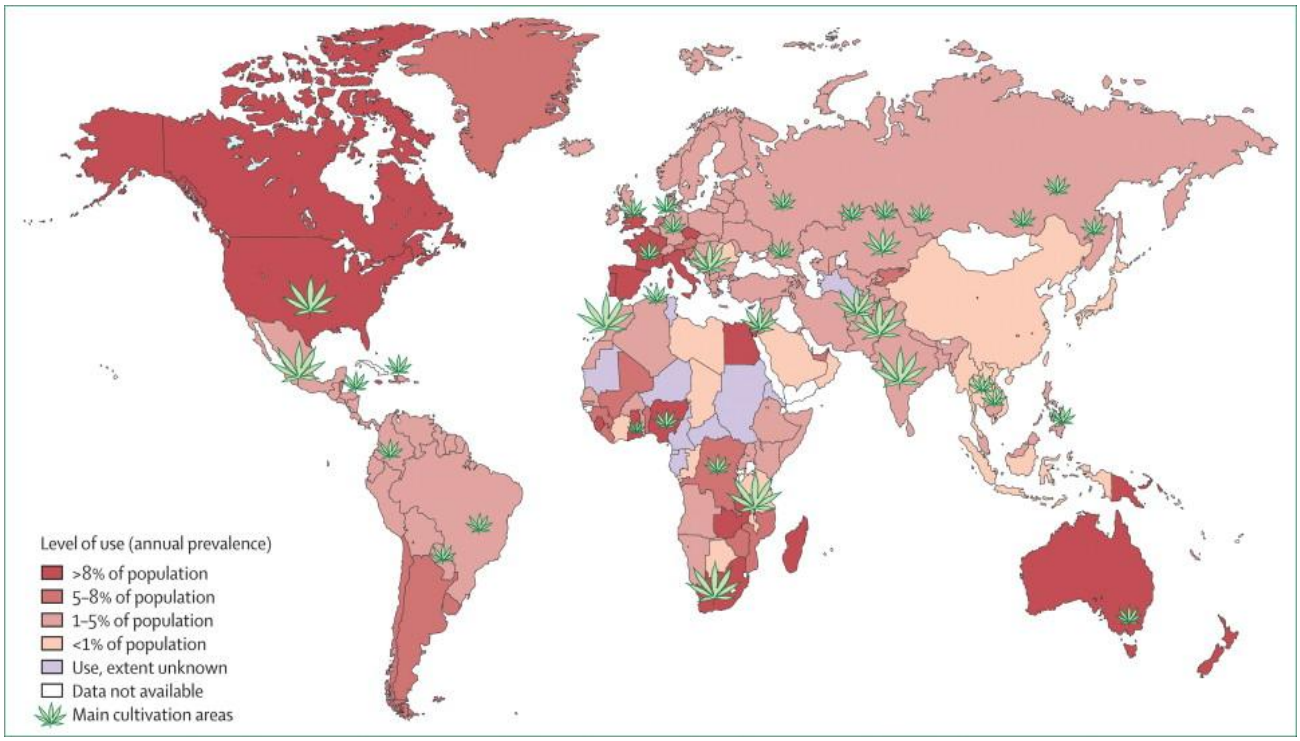



***Figure 2.1: Level of Cannabis Use in South Africa***

Figure 2.1 shows that South Africa has one of the highest levels of cannabis use with more than 8% of the population using cannabis and South Africa is also one of the main cultivation areas in the world. (8)

## *2.3 The Prevalence of Substance Use among South African Youth*

As in the United States, adolescent substance use and abuse are ongoing problems in South Africa.(9) The starting age of substance abuse in South Africa is twelve years or younger. From 1992 - 95 the use of drugs among teenagers increased by 600% and this figure is continuing to rise. Currently, one in two children in the average South African home are addicted to drugs or alcohol or run the risk of becoming addicted.(7)

By the $8^{th}$ grade, approximately 26% children are alcohol users and by the $11^{th}$ grade 40%. Additionally, 26% of $8^{th}$ graders and 29% of $11^{th}$ graders report binge drinking which suggests that many South African adolescents who drink alcohol, are doing so in a risky manner. (10)

The high prevalence of alcohol use in South Africa also is of concern given that use of these substances often precedes illicit drug use and that early and excessive substance use in adolescence predicts later abuse.(11, 12)

## *2.4 Challenges in Substance Diagnosis*

Psychiatric symptoms have been, for over 50 years, grouped together to form certain syndromes or diagnoses in order to help simplify thinking, improve communication between clinicians, predict outcomes, determine treatment and assist in determining the etiology of the symptoms. The American Psychiatric Association and the World Health Organization have published summaries on all the diagnoses used in psychiatry. The most commonly used in South Africa is the Diagnostic and Statistical Manual of Mental Disorders (DSM IV), the fourth edition of which was used in this study as the fifth version was not yet published at the commencement of this study. In this manual it clearly defines and indicates the symptoms and signs present in substance abuse or dependence as well as the symptoms present in the various psychotic disorders. (6, 13)

### *2.4.1 Substance Abuse versus Substance Dependence*

Substance abuse and substance dependence disorders are regarded as chronic, episodic and often relapsing. They occur along a spectrum from use to misuse to abuse and finally dependence. The use of a substance may or may not be clinically significant. Misuse is clinically significant but does not meet the criteria for abuse or dependence.(6) The DSM IV defines substance use disorders as either abuse or dependence.

Substance abuse and dependence are both defined as involving a maladaptive pattern of substance use leading to clinically significant impairment or distress. The number of symptoms occurring within a 12-month period determines the level of abuse or dependence. (6, 13)

***Table2.1: DSM-IV criteria for Substance abuse and dependence (6)***

| **Substance Abuse** | **Substance Dependence** |
|---|---|
| One or more of the following occurring within a 12 month period: | Three or more of the following occurring within a 12 month period. |
| Failure to fulfil major role obligations | Tolerance |
| Using in physically hazardous situations | Withdrawal |
| Incurring legal problems | Majority of time is spent around the substance |
| Persistent and recurrent social problems | Decreased or loss of other occupational activities |
| | In spite of these consequences there is a failure by the individual to abstain from the substance |

A variety of substance-induced disorders may also occur. These include intoxication, withdrawal, delirium, persisting dementia, persisting amnesic disorder, psychotic disorder, mood disorder, anxiety disorder, sexual dysfunction disorder and sleep disorders.(6, 13)

The distinction between substance abuse and dependence is therefore mostly based on the clinician's subjective interpretation of the individual's level of functioning and impact of the substance use on the ability to engage in daily life tasks. This does make the distinction not entirely accurate and can be interpreted differently between different clinicians. (14) This has lead to the change in the criteria in DSM 5 where the distinction between abuse and dependence is no longer made. Tolerance and withdrawal symptoms are now indicated as being markers for substance use disorders in distinguishing between abuse and dependence. The individual is classified only as having a substance use disorder and the severity is then classified based on the number of symptoms to which the individual accounts for. This will allow for communication and more uniform diagnosis between clinicians in the future.(15)

The progression from misuse to either abuse or dependence is not entirely understood. A strong genetic vulnerability has been documented but there is also the

combination of social and environmental factors which play a role. Research has indicated that early regular drinking has shown to be associated with later alcohol dependence and use and abuse or dependence on other drugs. The link, however, is not entirely explained by genetic or shared family environmental factors. Research has therefore also suggested that unique environmental factors contribute to transitions from early regular alcohol drinking to use, abuse and dependence on alcohol and other substances.(13, 16)

## *2.5 Adolescence*

Adolescence is derived from the Latin term *adolescere* meaning to grow into adulthood (17). It is the time between childhood and adulthood ranging from 12-18 years of age for girls and 13-20 years old for boys. It is the transition from a child into a mature adult bringing with it its recognition by society and accompanying responsibilities. The major concern around this stage of development is the impact of substance use on both the physical and psychological functioning of the adolescent.(17)

Plastic and dynamic processes drive adolescent brain development, creating flexibility that allows the brain to refine itself, specialize, and sharpen its functions for specific demands. Maturing connections enable increased communication between brain regions, allowing greater integration and complexity. (18)

Various physical, cognitive, emotional and social developments occur in this stage. Physical changes include increase in the growth rate, increase in body size, hormonal changes as well as the development of sexual characteristics. Cognitive development involves the development of thought processes including imagination, judgment, insight and abstract thought. Adolescents develop their own value systems, think more critically, develop their own plans, speculate, evaluate their thoughts, solve complex problems and become more open and creative thinkers.(17) The myelination of the parietal lobes allow for the development of abstract thought however both inhibition and judgment only develop in the later years of this stage. Emotional changes are linked to the various hormonal, physical and cognitive developments that occur during adolescence. This may generate emotional lability and uncertainty around thoughts and feelings (18).

Social development is the aspect which is of fundamental importance during the adolescent stage. The peer group becomes extremely important and allows for experimenting with different behaviours and relationships. The adolescent learns a sense of self separate from parent. These social interactions generate a sense of belonging, allow for the development of personal identity and create the foundation for the development of more mature interpersonal relationships in the future.(17)

## *2.6 Risk Factors to Substance Abuse*

A variety of factors have been noted which lead to an increased risk of substance abuse amongst adolescents. These include developmental, social, genetic, individual and contextual factors (16). Developmental factors include adjusting to body changes, negative peer influences, handling the decrease in parental influence, developing individuality, and constructing abstract thoughts but with limited judgment and insight (16). Social factors include family influences or dysfunction, exposing media, deviant peer group, family history of substance abuse and parental attitudes (16). Psychological factors include low self esteem, thrill seeking behaviour, co morbid Attention Deficit Hyperactivity Disorder, conduct disorder, depression or other mental illnesses, self medicating behaviour, or difficulty fitting in to peer group.(16, 18) Genetics may also play a role in terms of risk factors by an individual having a genetic vulnerability in terms of a relative also presenting with a substance use disorder or mental illness. (16) Research, however, has shown that risk factors including disinhibition, cognitive structure, play, deviant coping, friends' deviance and stressful life events are not solely responsible, but also individual and normative changes during the transition from adolescence to adulthood play a role in increasing the risk for drug use.(19) Social networks play a vital role in the early initiation of substances and the use of the substance is sustained by less time spent with parents and more with drug-using peers.(20) Specific to the South African context, the majority of the population reside in rural areas with limited resources and also the high number of social problems including violence, crime, poverty and gangsterism which exist. The lack of resources restricts the adolescent’s ability to engage in constructive leisure activities and therefore adolescents experience high rates of

boredom and passivity during their leisure time. This compounds the risk of potential substance abuse within the adolescent South African population.(17)

## *2.7 Activity Participation*

Activity participation involves the individual engaging in a variety of meaningful, purposeful, and goal directed activities which makes up their own personal life situations and provide a sense of wellbeing. To achieve a high level of activity participation would indicate good health and wellbeing. A lower level of activity participation would indicate some form of deficit or impairment that is hindering the individual from being able to carry out his/her daily life tasks or roles.

Due to the developmental processes which are still occurring during adolescence, the abuse of substances in this stage is noted to cause more adverse long term consequences on the individuals level of activity participation.(21) Adolescents involved in substance abuse are at an increased risk of road accidents, personal accidents, decline in cognitive functioning (17), school failure, poor judgment, violence, unplanned and unsafe sex, and suicide. (22) Studies have indicated that adolescent substance abusers experience higher rates of boredom during their leisure time than non substance abusers.(23, 24) Psychoactive substances and alcohol have been implicated in altering neural circuits involved in the dopamine reward-related regions in the brain and therefore contributing to substance dependence later in life.(25) Substance abuse may also lead to neurotoxicity where irreversible cell death occurs in the brain as well as the perpetuation or precipitation of a mental illness. This indicates that any substance abuse which occurs during this time will have a greater negative consequence on the brain and the level of activity participation, than in adulthood.(21)

### *2.7.1 Effects of Alcohol on Activity Participation*

As described above, the brain areas which are actively developing during adolescence include the prefrontal cortex, limbic system areas, and white matter myelin (26). These areas are involved in cognitive and behavioural development, and emotional regulation which may, therefore, be particularly vulnerable to the adverse and damaging effects of

alcohol.(26) Thus plausible it is to link alcohol exposure during the critical adolescent developmental stages to disruption of the brain plasticity and maturation processes, resulting in behavioural and cognitive deficits.(18)

Emerging trends from developmentally focused research have indicated that there are subtle but important neurocognitive disadvantages among adolescents with alcohol-use disorders as compared to adolescents without alcohol use disorders.(27) There is a noted reduction in attention, executive functions,(21) working memory, problem solving, patterns of regional brain activation, and gray and white matter volume.(27) The long-term neurocognitive consequences of early alcohol consumption are not readily understood.(28) However, prolonged visual–spatial and cognitive dysfunction has been reported into adulthood. (29) The neurocognitive decline has been linked to three variables which have been shown to have a significant impact on cognitive sensitivity to alcohol and they are: age of first alcohol use (age of drinking initiation); specific pattern of alcohol consumption and being male gender.(28)

There is evidence to suggest that alcohol dependence is a primary cause of impairments in overall quality of life, general health, mental and physical health and social functioning. (30) Patients meeting criteria for alcohol dependence have scored lower on quality of life, mental health (31) and levels of daily functioning scales.(32)

### *2.7.2 Effects of Cannabis on Activity Participation*

Substance use has a wide range of negative effects on health, psychosomatic symptoms, emotional distress, and interpersonal relationships. (33)

The most likely adverse physical effects of regular cannabis use include a substance dependence syndrome, increased risk of motor vehicle accidents, impaired respiratory function, cardiovascular disease, and adverse effects on adolescent psychosocial development and mental health.(8)

Studies have indicated adverse psychosocial consequences in terms of early adolescent cannabis use increasing the risk in late adolescence of not graduating from

high school; delinquency; having multiple sexual partners; not always using condoms; perceiving drugs as not harmful; having problems with cigarettes, alcohol; and having more friends who exhibit deviant behaviour. It hinders the acquisition of skills necessary for employment and heightens the risks of contracting HIV, crime, depression, suicidal behaviours and abusing legal and illegal substances.(34-36)

Other factors which have been linked to cannabis use include lower educational and occupational expectations, being suspended or expelled from school, failure to enter university, failure to obtain a university degree, fired from jobs, collecting disability grants, rebelliousness, not participating in productive activities, not attending church, and being an unmarried parent. Cannabis users show a poor performance on developmental tasks which are integral in becoming an independent and responsible young adult.(37-39)

Long term cannabis use shows adverse consequences to individuals cognitive functioning with studies demonstrating impairment in memory and attention which lasts beyond intoxication and worsens with increasing years of regular use. (40-42)

Chronic cannabis use has also been associated with an 'amotivational syndrome,' in which individuals have limited motivation and drive to engage in activities which further compounds their cognitive impairments and occupational functioning.(42, 43)

The most debilitating consequence of cannabis abuse is the development of a severe mental illness such as schizophrenia or other psychotic disorders, which has been strongly associated with alcohol and cannabis abuse. (44-46) Cannabis use has been shown to increase the speed of onset of psychosis and prodromal symptoms of schizophrenia. (6, 47)

It is documented that substance abuse and dependence is common amongst people with severe mental disorders such as schizophrenia. (1) This therefore, suggests that the psychiatric disorder may exist before the substance abuse disorder in which case the substance abuse disorder will compound the situation and further increase the severity of the other psychiatric disorder.(48, 49)

### *2.7.3 Impact of Psychosis on Activity Participation*

According to the American Heritage Medical Dictionary of 2007, a psychotic disorder has been defined as a severe mental disorder which is characterized by the derangement of personality, loss of contact with reality and a prominent deterioration in normal social and occupational functioning. (50)

One of the most common psychotic disorders is schizophrenia which has been described as a severe disorder that often has a significant impact on the lives of individual sufferers.(6)

Patients suffering from a psychotic disorder display a wide range of deficits across neurocognitive domains including language skills, attention and executive functions with verbal learning and memory being the most affected.(51) The decline in cognitive function has been associated with poor vocational outcomes, (52) impaired insight(54) and impaired basic sensory processing.(54) Sensory processing problems may impact on gross motor coordination and motor planning.(17)

Emotive disturbances have been noted in terms of emotional expressions which may be decreased in range and intensity. These disturbances may give the impression of the patient being apathetic.(6) However, they experience difficulty linking emotion with goal directed behaviour due to prefrontal and cortical deficits. This would therefore affect volition, empathy and appropriate engagement in tasks. Research has indicated that a severe emotion perception deficit is associated with a poorer level of functioning and that poor identification of emotions of others impacts on satisfaction in social functioning.(55, 56)

## *2.8 Dual Diagnosis*

Commonly seen in practice is the co occurrence of a severe mental illness and a substance abuse disorder which is known as a dual diagnosis.(1) Dual diagnosis is associated with poorer clinical outcomes such as increase in psychotic symptoms, poorer treatment compliance, increased relapse rate, poor money management, increased

violence and increased hospitalization as compared to a single diagnosis of either a psychiatric or a substance abuse disorder. (1, 2)

The neuropsychological deficits such as executive and memory disturbance, found with patients with a psychotic disorder have also been reported in patients presenting with alcohol use or substance use disorders.(57) Chronic use of alcohol and cannabis has been, for many decades, shown to cause cognitive impairments in adults.(21) Studies within the last 5 years, have indicated that amongst both healthy individuals and patients with schizophrenia, there appears to be little difference in cognitive performance between cannabis users and non-users. Patients diagnosed with schizophrenia and suffering from cannabis use disorder had poorer academic achievements and lower vocabulary scores, but performed better in tests of verbal and working memory, visuomotor speed and executive function than individuals diagnosed with just schizophrenia. This is therefore suggesting that cannabis use has only subtle effects on the neurocognitive performance (58, 59) and that co morbid alcohol or cannabis abuse or dependence has limited effects on cognitive performance in individuals already presenting with a psychotic disorder.(57) This better cognitive functioning in substance users may however be due to a lower vulnerability to psychosis, as compared to purely schizophrenic patients. (58) This association between better cognitive performance and cannabis use in schizophrenia may be driven by a subgroup of “neurocognitively less impaired” patients, who only developed psychosis after a relatively early initiation into cannabis use. (60)

This recent literature has only been conducted in small study populations and therefore larger studies will still need to be conducted in order to make evidence based associations.

## *2.9 Best Practice in Treatment of Substance Abuse and Dual Diagnosis*

Developing countries, such as South Africa, are particularly vulnerable to an increase in substance use because of the demands placed on the health care system, society and

the fragile economy. The lack of resources, poor facilities, poverty, unemployment and limited health services only compound the situation.(45)

Substance abuse treatment programmes have therefore started to shift from the medical model of treating the individual's symptoms once a problem has occurred, to the more psychosocial model of aiming to prevent the substance abuse problem from occurring, at the community level. This involves various strategies to educate young individuals and limit access to illegal and legal substances. There is a need for quality assessments, adolescent-specific treatment services, use of a variety of therapeutic modalities, evidence-based practice, and research.(48)

Primary prevention strategies have focused on community intervention programmes for adolescents are aimed at raising community awareness about the harmful effects of substances, developing skills, providing social support and preventing substance abuse. (17) An example of a community intervention programme is the Health Wise programme which has been documented as being a promising approach to reducing multiple health risk behaviours among the population of school-going South African adolescents.(61) Targeting university student populations by implementing brief, motivational or skills-based interventions, targeting high-risk students identified either through brief screening in health care centres or other campus settings or through membership an identified risk group, has also shown positive results in the literature. (62)

Secondary preventions strategies for individuals with a substance abuse problem have focused on promoting attendance in community intervention programmes such as support groups. The SANCA Alcoholics Anonymous and Narcotics Anonymous support groups have shown to increase alcohol abstinence and reduce substance and alcohol problems. (63)

Differences have been noted between alcohol and cannabis users in terms of their adherence and compliance to treatment programmes. Those who were cannabis-dependent were less likely to begin treatment than those dependent only on alcohol. Clinicians may therefore consider additional efforts during the admission process to

engage individuals who abuse cannabis and have decreased motivation. (64) A high motivation to change is a crucial triggering factor to individuals' engagement in clinical treatment.(65) Motivational interviewing has shown to be a beneficial counselling tool when addressing individuals who abuse substances as it facilitates their own motivation to change and increases their level of insight.(66)

The treatment of individuals who present with a dual diagnosis has been conflicting due to the separation of medical and rehabilitation services. These approaches conflict in methodology and thus have proven to be ineffective. The combination of psychosocial and pharmacological interventions has shown to have the most beneficial outcomes in treating dual diagnosis. Multidisciplinary interventions that use a cognitive behavioural approach or cognitive training as well as the involvement of people close to the abuser, as well as some of the specific pharmacological interventions, have been shown to yield the best results in terms of indicators of abstinence, prevention of relapse and improve cognitive performance, symptoms and everyday functioning.(67-69) Psychosocial interventions have been shown to reduce the rate of relapse and enhance activity participation .The main focus of these interventions include, optimizing function, minimize risk of relapse, improve quality of life, and minimize hospitalization.(70) Some examples of these interventions include motivational interviewing, psycho education and occupational therapy.

Psycho education refers to the education offered to people who live with a psychological disturbance. Psycho educational programmes are one of the main forms of intervention in improving knowledge in patients suffering from Schizophrenia in order to facilitate compliance, prevent relapse and improve overall well being. Some of the main goals of a psycho education programme include providing applicable information, facilitating the expression of feelings, including family members to discuss their feelings and concerns, identifying stressful factors and coping behaviors and providing the family and the client with tools to develop a balance and sense of wellbeing in their daily lives.(71) These programmes also diminish stigmatization, alter negative perceptions and attitudes as well as decrease the health care costs and the number of relapses.(72)

Research has shown that engagement in an occupational therapy programme enhances vocational, social and a variety of other occupational outcomes.(73, 74) Participation in highly structured leisure activities has also shown to reduce the levels of destructive social behaviour, reduce the occurrence of substance and alcohol abuse and improve activity participation in all daily life tasks.(75)

The focus of intervention for dual diagnosis is ensuring abstinence from the substance by changing behaviour and improving the individual's lifestyle. This has been shown to be the most successful where a multidisciplinary approach has been used as well as through the combination of both psychosocial and pharmacological interventions. (17)

## *2.10 Conclusion*

Statistics have provided some insight into the depth and ever increasing abuse of substances within the South African population. The literature presented some possible risk factors that lead to substance abuse and the impact substances can have on normal adolescent development. Cannabis and alcohol abuse have been discussed and the impact that they have on activity participation. These substances have been shown to cause multiple levels of impairment, a variety of negative social and occupational consequences and being linked to dual diagnosis. The guidelines for treatment for individuals with a dual diagnosis are focused on integrating services between mental health and social substance abuse programmes. Currently these treatment guidelines are limited and non specific in terms of type of psychiatric diagnosis and type of substance. This results in these individuals developing poorer clinical and functional outcomes. (1, 48)

Through this research, the first stage in attempting to address this problem is to determine the exact impact or effects of the different substances in individuals already diagnosed with a psychiatric disorder. This will be further discussed in the chapters to follow. Once a thorough assessment and baseline level of function is determined for each substance and diagnosis, the treatment and psychosocial programmes can be tailored to

address specific problems. This may lead to better long term outcomes such as sustained abstinence from substances and better compliance with psychiatric medication.

# *CHAPTER 3 Methodology*

## *3.1 Introduction*

This chapter will describe how the study was executed, the population that was accessed and procedures that were followed including how the data was collected and analyzed.

## *3.2 Research Design*

A non-experimental design and observational study (cross section) with no intervention was used to achieve the aims and objectives of the study. This research design was selected as it provided a quick, non invasive and inexpensive once off assessment procedure for data collection. The process involved a once off occupational therapy assessment using the Activity Participation Outcome Measure (APOM) (Appendix A,) as the recording tool, of participants who met the specific inclusion and exclusion criteria. The information obtained produced descriptive quantitative data which was analyzed accordingly.

## *3.3 Population*

Individuals with a confirmed diagnosis of an Axis 1 Psychotic disorder were the population investigated in this study. The population consisted of three groups:

- Group 1: Psychotic Disorder with cannabis abuse/dependence
- Group 2: Psychotic Disorder with alcohol abuse/dependence
- Group 3: Psychotic Disorder with no substance abuse/dependence

Alcohol and cannabis have been shown to be the most common substances of abuse amongst the South African population (15) and therefore these substances were selected and grouped separately in order to determine their effects on the level of activity

participation. The grouping of the participants into three groups allowed the researcher to determine the impact of adolescence initiated alcohol and cannabis use on the level of activity participation whilst utilizing the no substance group as a comparative variable for the level of activity participation in individuals presenting with a psychotic disorder. This allowed the researcher to determine the variances on the level of activity participation caused either by the alcohol or the cannabis.

## *3.4 Sample*

### *3.4.1 Sample Selection*

The sample that was selected included individuals attending outpatient and inpatient services at CHBAH. Individuals who utilized services at South African National Council on Alcoholism & Drug Dependence (SANCA) Soweto were also approached. However, none of the participants at SANCA Soweto met the inclusion and exclusion criteria and therefore only participants from CBHAH were included. The method of sampling was purposeful and convenient as the researcher accessed those individuals who were already utilizing hospital resources. The purposeful and convenient sampling was directed only at those individuals who met the inclusion criteria. Participants were referred to occupational therapy but participation in the research study was on a voluntary basis after being provided with information concerning the study and signing a consent form.

### *3.4.2 Sample Size*

The size of the sample was determined according to the number of domains in the APOM (Appendix A). An estimated size of 3-4 subjects per domain was used to calculate a meaningful difference between the groups. With eight domains in the APOM, the estimated ideal sample size was determined at 24 – 32 participants per group. The sample size calculator designed by Gertsman was used to calculate the value at which statistical difference could be determined. This is a statistical software package with a sample size calculator and freely available from www.sjsu.edu/faculty/gerstman/EpiInfo/bin-case.htm. The power was set at 95%, the standard deviation at three and the mean effect difference at three. The calculation was therefore as follows:

$16 \times 3^2 = 144/3^2$

$144/9 = 16$.

From this caluculation, a minimum 16 participants was needed per sample group. A total sample size of 16-30 was therefore accepted for each sample group however the researcher decided to set an ideal sample size at 30 participants, in order to promote more reliable and valuable data.

### *3.4.3 Criteria applicable to all participants*

#### *3.4.3.1 Inclusion Criteria*

Criteria were used in order to obtain a sample which was mostly consistent and eliminated as many confounding variables as possible. The inclusion criteria included:

- Only male participants were used in the study as psychotic disorders with co morbid substance abuse or dependence had been shown to be more prevalent amongst the male population. (76)

- The participants were between the ages of 19 -29 years. This age band was selected as according to various theorists such as Piaget and Erikson these early adulthood years are the years when cognition, motor, perceptual and social skills are fully developed and therefore the individuals should be able to achieve a high level of functioning.

- The participants had a confirmed diagnosis of either a primary or secondary psychotic disorder.

#### *3.4.3.2 Exclusion Criteria*

Criteria were used in order to exclude certain individuals from participating in the study in order to eliminate variables which may affect the level of activity participation. The exclusion criteria were as follows:

- Participants were not actively psychotic or under the influence of any psychoactive substances or alcohol at the time of consent and assessment.

- The participants did not have an additional medical diagnosis which severely influenced their level of function.

- The participants were not diagnosed with any other psychiatric axis 1 or 2 disorders. (i.e. other than a psychotic disorder)

### *3.4.4 Criteria specific for Group1: Cannabis abuse/dependence and Group 2: Alcohol abuse/dependence*

#### *3.4.4.1 Inclusion Criteria*

- The initiation of the alcohol or cannabis use took place between the ages of 12-18 years which was determined by the personal interview with the participant and collateral information from the participant's family members.

- The participants met the criteria for either cannabis or alcohol abuse or dependence according to the DSM-IV, at some point between their age of initiating the use of alcohol or cannabis and their current age.

#### *3.4.4.2 Exclusion Criteria*

- The participants have met the criteria for abuse of or dependence on any other substance (i.e. other than alcohol or cannabis).

- The participants met the criteria for abuse or dependence for both alcohol and cannabis simultaneously.

### *3.4.5 Criteria specific for group 3: No alcohol or cannabis abuse/ dependence*

#### *3.4.5.1 Inclusion Criteria*

- The participants did not meet the criteria for either substance or alcohol abuse or dependence.

## *3.5 Measurement Tools*

An occupation based assessment process was used to assess each of the participant's level of activity participation. This process involved an initial interview of the participant, followed by the participant engaging in a variety of structured activities, both individually and within groups, to assess each of the occupational performance areas. Some examples of the activities included soccer, beading, painting, paper based crafts, cooking, sewing, ironing, gardening, etc. An interview with the family was also conducted in order to gain any additional collateral information required. The assessments will be discussed in more detail under data collection.

The Montreal Cognitive Assessment (MOCA) (Appendix B) tool was also administrated at this stage. The MOCA is a bed side screening tool to assess an individual's cognitive abilities. The tool was developed and norm referenced on an American population. It includes components of cognition such as visuospatial abilities, attention, language, mathematics, memory, sequencing and orientation. The total score for the test is 30 with

an expected value of 26 or higher to be of normal cognitive abilities. This tool was selected as currently within the research setting the Mini Mental Status Examination, another type of bed side cognitive screening tool, is being used by the unit psychiatrist. The test re-test reliability of the Mini Mental Status Examination is poor and no evidence on its construct validity could be found, therefore another cognitive screening tool had to be selected. The MOCA was selected as literature indicated that it is s a useful tool in detecting mild dementia and Alzheimer's dementia with a fairly good reliability and validity. (77, 78) This tool was used to assist the researcher with levelling the client on the APOM (Appendix A) in terms of their process skills.

The MOCA (Appendix B), structured activities and interview provided the researcher with sufficient information in order to determine the client's level of activity participation.

The APOM's (Appendix A) computer based software program was then used to record the participant's overall level of activity participation. This outcome measure was selected as it is allows the researcher to record most aspects of the individual's level of activity participation. The APOM records eight different domains of activity participation including motivation, self esteem, process skills, life skills, affect, balanced lifestyle, role performance and communication skills. The outcome measure was developed and researched in South Africa and therefore the results produced are viewed as being valid and reliable within the South African context. The inter-rater and intra-rater reliability has shown correlations of 0.7 and above and the construct validity was support through the Rasch analysis revealing that the scale of the APOM can indeed be transformed to an interval scale, thus creating a true measure of activity participation. The APOM has been proven as an effective tool to detect change, the scores allow for accurate analyses as well as the ability to determine a significant difference on the level of activity participation between the three groups. (79)

The APOM (Appendix A) scores range from one to eighteen with one being the lowest level of activity participation and eighteen being the typically highest level of activity participation seen in the clinical setting. Clinical experience has shown that at CHBAH, the average score range for the psychiatric population is between seven and eight and a

patient on a level nine or ten is typically then discharged from the hospital setting. On a level seven or eight the patient typically presents with fluctuating moods, unrealistic self concept, egocentric interpersonal relationships, depends on others to structure and support participation in an activity, able to perform basic hygiene tasks but is reliant on others to complete household chores, financial management duties and accessing transport. On a level ten the patients mood is more stable, they have better control of their emotions, realistic self concept but lack confidence or self esteem, are able to complete familiar tasks but needs support in completing unfamiliar tasks, independent in hygiene and some grooming tasks, able to complete some household chores independently but has difficulties with financial management and child care duties. (79)

Although the APOM (Appendix A) has been determined as a valid and reliable tool and the researcher bias was also controlled by the researcher completing the assessment on all the participants across all three groups, the researcher opted to include an additional procedure during data collection to limit subjectivity and bias. This involved the assessment of one random participant per group, conducted on site by another occupational therapist qualified in using the APOM. The other occupational therapist and the researcher both completed an assessment on the same participant and documented the APOM scores. The APOM scores for the one participant were then compared and discussed. The outcome of this procedure showed good agreement of APOM scores which enhanced the quality of the data.

## *3.6 Data Collection*

Once the researcher had identified a possible participant, the unit psychiatrist was approached and the inclusion/exclusion criteria further discussed. A referral to the study was then completed by the unit psychiatrist (Appendix C). The unit psychiatrist was responsible for confirming the psychiatric diagnosis as indicated in the hospital file. Since the diagnosis was one of the major inclusion criteria for the study, it was important to work with confirmed diagnoses. The medical history was obtained from the hospital file in order to determine the presence of any other medical conditions which would have excluded the participant from the study. The unit psychiatrist determined the

participant's ability to engage in the study in terms of being psychiatrically stable and being able to provide informed consent.

The DSM-IV criteria on substance abuse and dependence was used in order to categorise participants and also exclude other participants who did not meet that specific criteria from the study. The level of substance use was categorised by the unit psychiatrist.

Once the unit psychiatrist had completed the referral form for the study (Appendix C), the researcher then commenced with the data collection process and the participant engaged in a full occupational therapy assessment to determine his level of activity participation.

The researcher developed a classification of group data sheet (Appendix D) which was used to record each participant's necessary details including type of psychotic disorder, type of substance abuse, age initiated substances, current age and level of substance abuse. The participant demographic information sheet was completed by the researcher in order to record the participant's basic background information including address, contact details, personal history, occupational history, family history and medication. This information was all obtained from the initial interview with the participant, which had a duration of approximately one hour.

Once the initial interview was completed and all background information had been obtained, the researcher and the participant then engaged in a variety of different structured activities. The activities selected were dependant on the participant in terms of his history, culture, age, gender, etc. Some example of activities used included soccer, cooking, gardening, painting and paper based crafts. This process of selecting activities based on the individual follows the philosophy and fundamental values of occupational therapy. The assessment would therefore need to be client centred in order to accurately reflect the person's functioning in all of the occupational performance areas. (11) One standard activity or group could therefore not be selected, as it may not be within all the participants frame of reference, interest or roles and thus would be an inaccurate

assessment or reflection of their level of occupational performance. The activities facilitated the researcher in levelling the participant's life skills, process skills, affect, motivation, self esteem, role performance, communication/interaction skills and balanced lifestyle.

The participants generally engaged in one assessment, however, the duration of the assessment was approximately 3 hours and therefore some participant's who were of a lower level of functioning found it difficult to sustain their participation for this length of time. This resulted in certain participants returning for a second session in order to complete the assessment.

Once the researcher had completed the assessment, the information was transcribed into the APOM programme, using numerical values to level the participant's activity participation within the eight domains. The APOM then produced a composite score for the participant's overall level of activity participation and it automatically generated a report and the results were displayed in a spider graph (Appendix A). The overall total score as well as the total score for each domain was recorded onto an Excel spread sheet against the participants current age, type of substance, age initiated substance use, level of substance abuse and type of diagnosis.

All of the participants in the study informed the researcher that they were able to understand and read English. The researcher determined that it was acceptable then to provide the participants with informed consent forms in English. Some participants requested if they were able to ask questions or respond to the researcher in their home language and for these participants a translator was necessary. An occupational therapy technician was used as a translator to explain the information sheet, facilitate the process of informed consent (Appendix E), assist obtaining certain demographic information, explain the procedure for each activity as well as ask questions which had been directed by the researcher, in order to determine the participant's state of mind and processing skills whilst completing each activity. The translator was informed to translate only exact words and phrases used by both the researcher and the participant. This minimised the translator's subjectivity and bias within the study.

## *3.7 Data Analysis*

The data recorded on the excel spread sheet was analyzed within and between the three groups in order to produce descriptive and inferential statistics. The descriptive data produced was analyzed in terms of the number of participants per group, age initiated substances, current age of participants and their APOM scores. The median, interquartile range, frequency and percentages of this data were calculated. The median and interquartile range were used to provide the researcher with a clearer understanding of the middle values concerning participants current ages and ages initiated substances. Within the sample, two or three participants presented with extreme values and these would have adjusted the mean towards the extreme values, rather than being a true representation of the middle values within the sample. This data has been drawn up into different tables, bar graphs and box plots in order to be easily accessible analyzed.

In terms of calculating the inferential statistics, the Bartlett's test was used to test for equal variances, while the Bonferroni test was used to adjust for multiple comparisons. The Bartlett's test permits one to compare the variance in two or more sample groups to determine if they are drawn from populations with equal variance, in other words, to test for homogeneity.

The ANOVA, a test to analyze the variance between groups, assumes that there are equal variances between groups. The ANOVA was done after the Bartlett's test had indicated that the groups had equal variance. Using the means of the three groups in the study, the ANOVA tested the null hypothesis whether the population mean of the total APOM score is equal across all three groups. The statistical significance was set at $p<0.05$. ANOVA was also applied to test for differences between each domain across the three groups. The greatest difference between groups was noted.

## *3.8 Ethics*

Ethical clearance was obtained from the Human Ethics Research Committee of the University of the Witwatersrand before the commencement of the study. Ethical clearance number M120501 (Appendix F).

Permission and approval was obtained from the Ethics Research Committee at Chris Hani Baragwanath Academic Hospital before the data collection process was able to be commenced at this hospital (Appendix G).

All participants were provided with the information sheet and signed informed consent before commencing with the research (Appendix E). If the participants did present with psychotic symptoms, these symptoms did not impact on their ability to give informed consent to the study before commencing with the occupational therapy assessment. All participants were not objectively under the influence of substances by withdrawals or intoxication symptoms, at the time of the assessment. All participants were cognitively able to understand the purpose of the research study and provide informed consent.

All participants engaged in the research on a voluntary basis and none of the participants requested to leave the study.

## *3.9 Conclusion*

The above chapter described how the study was executed and what procedures were followed. It describes the design, sample, measurements, process, tools and the analysis of the data. The following chapter will describe the results and the data obtained from these procedures.

# *CHAPTER 4 Results*

## *4.1 Introduction*

This chapter commences with the descriptive analysis of the data followed by inferential statistics. Tables, bar graphs and box plots are used to present the descriptive statistics. The results of the inferential statistics are depicted in table form.

## *4.2 Descriptive Statistics*

The data presented below describes the study sample as well as the scores obtained from the APOM and MOCA.

Table 4.1: Represents the median and the interquartile range (IQR) of the chronological age, the APOM and MOCA scores across all 3 groups. The age of onset of the substance use (age started) are presented for Group 1 and 2.

From this data, various observations and trends have been identified. Individuals abusing cannabis presented with the lowest IQR score for their current age compared to the other 2 groups. This indicates that individuals abusing cannabis presented to this study as currently having the youngest age compared to the alcohol group which presented as being the oldest participants utilizing psychiatric services at CHBAH. Those individuals who abuse cannabis commenced their use of cannabis at a younger age (15 – 16 years) as compared to those abusing alcohol. The cannabis group had a narrower IQR whereas some participants only started to abuse alcohol at 18 years of age.

***Table4.1: Median (interquartile range) across all 3 Groups***

| | | Group 1 (n = 30) Cannabis | Group 2 (n = 18) Alcohol | Group 3 (n = 30) No substances | Total (n = 78) |
|---|---|---|---|---|---|
| | | Median (IQR) | Median (IQR) | Median (IQR) | Median (IQR) |
| Current Age | | 22.5 (21 – 26) | 28 (24 – 29) | 27 (23 – 29) | 25 (22 – 28) |
| Age Started Substances | | 15 (15 – 16) | 16.5 (15 – 18) | n/a | 16 (15 – 17) |
| APOM scores | Affect | 9.2 (7.7 – 10.7) | 10.2 (9 – 12.3) | 7.7 (6 - 8.7) | 9 (6.7 – 10.3) |
| | Balanced Lifestyle | 7 (6 – 9) | 9 (7.3 – 9.7) | 7.3 (6.3 – 8.3) | 7.5 (6.3 – 9) |
| | Communication/ Interaction Skills | 8.85 (7.5 – 10.5) | 10.6 (8.2 – 12.2) | 7.25 (6.2 – 8.2) | 8.2 (6.8 – 10.5) |
| | Life skills | 8.4 (6.8 – 10) | 9.9 (9.3 – 11.2) | 6.8 (6.2 – 7.7) | 7.6 (6.7 – 9.8) |
| | Motivation | 7.8 (6.8 – 9.8) | 9.4 (8.4 – 10.6) | 6.8 (6.6 – 7.8) | 7.6 (6.8 – 9.8) |
| | Process Skills | 9.2 (7.1 – 11) | 10.2 (9.6 – 11.6) | 7.5 (6.6 – 8.6) | 8.6 (7.1 – 10.5) |
| | Role Performance | 8 (7.5 – 10.5) | 10.6 (9.6 – 11.6) | 7.6 (6.6 – 8.2) | 8 (7.5 – 10.5) |
| | Self Esteem | 7.7 (6.9 – 10.7) | 10.6 (8.4 – 11.4) | 7.6 (6.4 – 8.4) | 7.9 (6.9 – 10.6) |
| MOCA | | 20.5 (16 – 24) | 20 (15 – 25) | 19 (15 – 22) | 20 (15 – 24) |

The sample size at the end of the research included 30 participants in the cannabis and no substance abuse groups, with a total of 18 participnats in the alcohol group. Overall the total sample size included 78 participants.

When comparing the average APOM scores for each domain across the three groups, the highest level of activity participation was noted in the alcohol group and participants

within the group of no substance abuse scored the lowest across all of the domains. The only exception hereto is in the balanced lifestyle domain where the average APOM scores were similar across all groups. The actual scores range between six and nine and according to the APOM descriptions of these scores, the participants are unable to organize a meaningful and satisfying routine with inappropriate habits (e.g. substance and alcohol abuse or dependency) that dominate their life style.

Unlike the APOM scores, the scores depicted by the MOCA were similar across all three groups. This is noticeable below the "normal" score of 26 or higher. This indicates a low level of cognitive functions for example memory, sequencing, orientation, etc, as compared to the expected norm for an adult population.

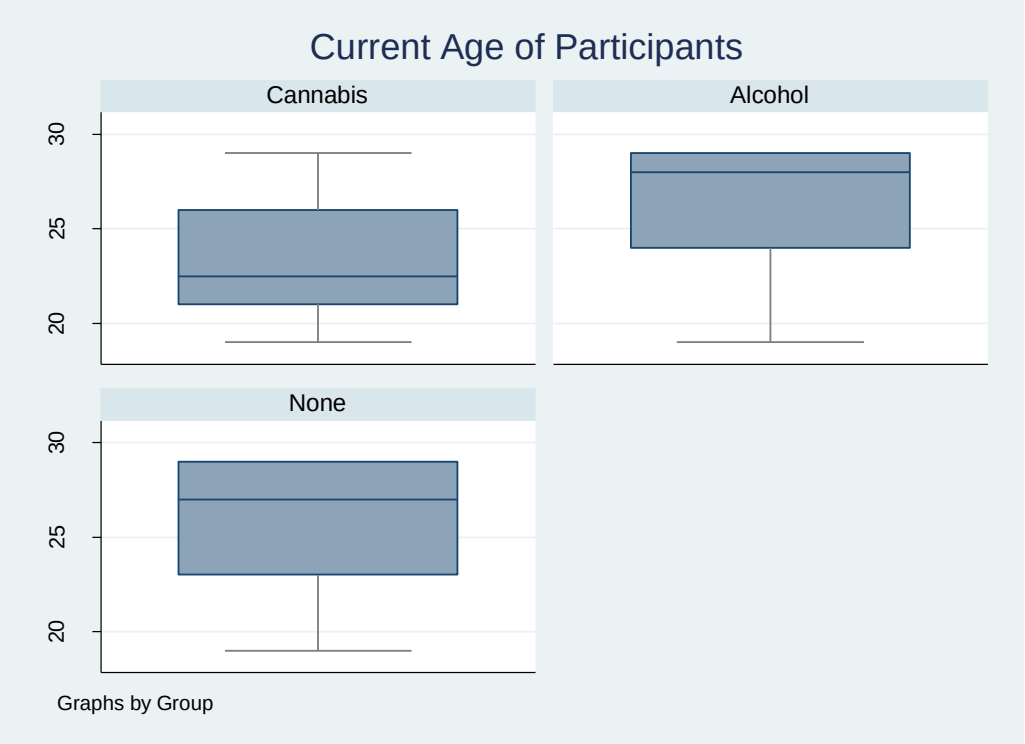



***Figure 4.1: Box plot depicting the median and IQR of participant's current age across all the three groups***

Figure 4.1 diagrammatically represents what is indicated in Table 4.1. Participants within the cannabis group were generally of a younger age whereas the participants within the alcohol group were the oldest. Individuals within the no substance abuse group identified with the widest range of current age.

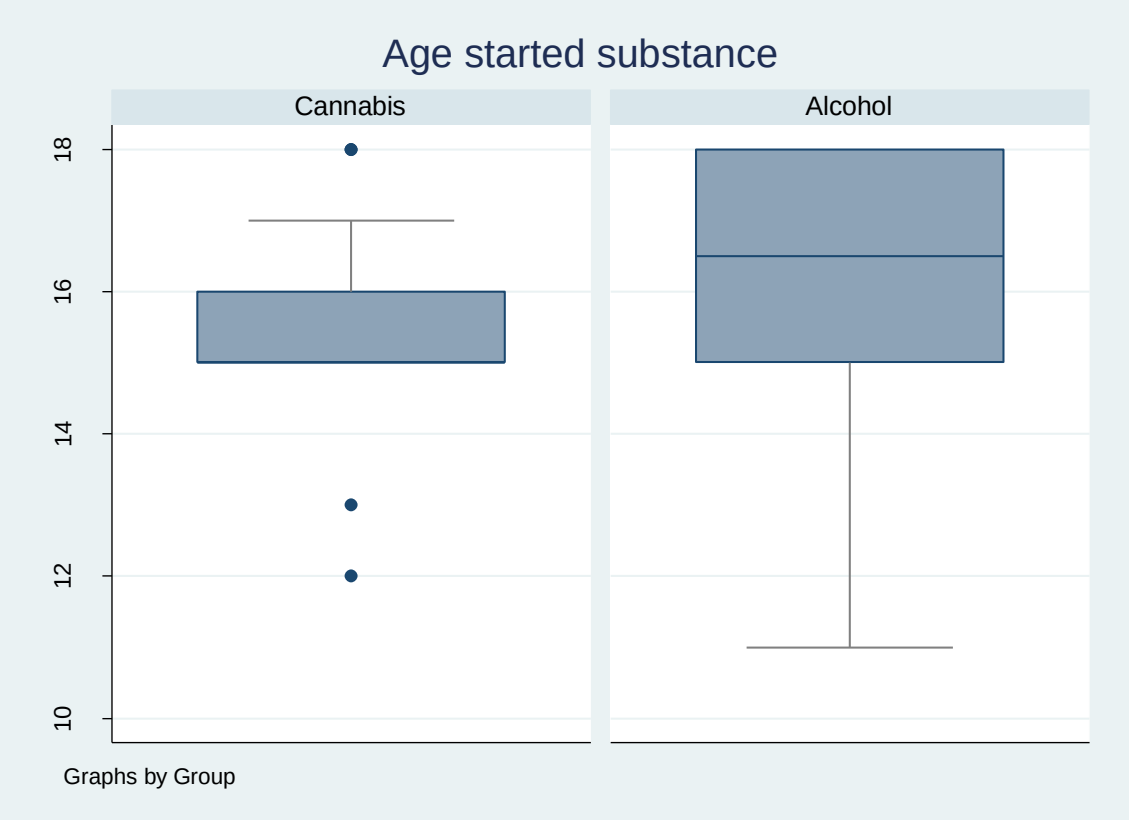



***Figure 4.2: Box plot depicting the median and IQR for the age participants initiated substance abuse***

Figure 4.2 represents the data presented in Table 4.1. The data from the sample indicates that the participants within the cannabis group started abusing substances at a younger age as compared to the alcohol group. It should however be noted that within the cannabis group there were also extreme values outside of the IQR.

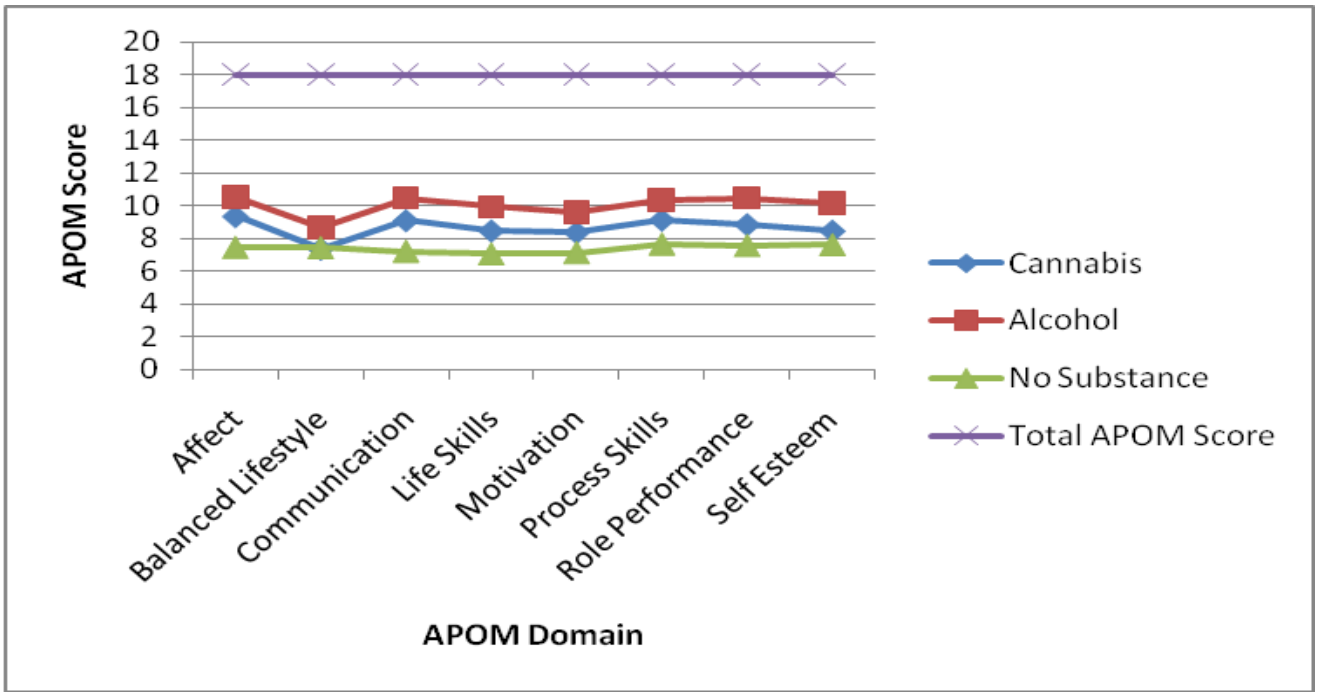



***Figure 4.3: Comparing average APOM scores across the three groups***

Figure 4.3 represents the average APOM scores across all three groups for all eight domains. Figure 4.3 graphically represents the information presented in Table 4.1. It shows that across all of the domains the no substance group consistently scored the lowest whereas the alcohol group scored the highest.

***Table 4.2: Abuse versus Dependence in Group 1 and 2***

| | | Group 1 (n = 30) Cannabis | Group 2 (n = 18) Alcohol | Total (n = 48) | Total Percentage |
|---|---|---|---|---|---|
| Abuse | Frequency | 26 | 17 | 43 | 89.6 |
| | Percentage | 54.2 | 35.4 | 89.6 | |
| Dependence | Frequency | 4 | 1 | 5 | 10.4 |
| | Percentage | 8.3 | 2 | 10.4 | |

Table 4.2 Compares the number of participants diagnosed with either abuse or dependence in the cannabis and alcohol groups. More participants overall were diagnosed with abuse but those diagnosed with dependence mostly originated from the cannabis group.

***Table 4.3: Type of Diagnosis***

| | | Group 1 (n = 30) Cannabis | Group 2 (n = 18) Alcohol | Group 3 (n = 30) No Substances | Total (n = 78) | Total Percentage |
|---|---|---|---|---|---|---|
| Substance Induced Psychosis | Frequency | 17 | 15 | 0 | 32 | 41 |
| | Percentage | 21.8 | 19.2 | 0 | 41 | |
| Schizophrenia | Frequency | 13 | 3 | 30 | 46 | 59 |
| | Percentage | 16.7 | 3.8 | 38.5 | 59 | |

Table 4.3 Tabulates the different types of diagnoses between the 3 groups. Only two diagnoses were present in the sample population and those included Schizophrenia and Substance Induced Psychosis. The most common diagnosis across the whole population

was that of schizophrenia but substance induced psychosis was more predominant within the alcohol group.

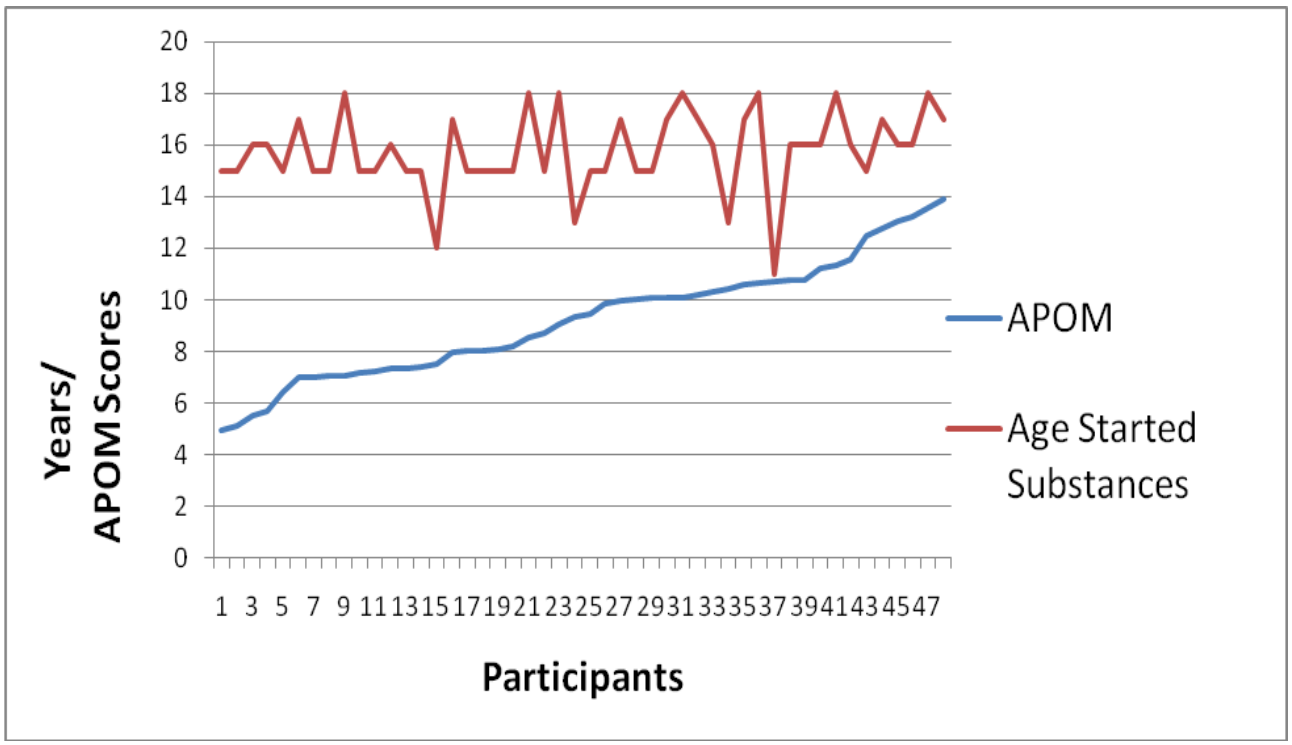



***Figure 4.4: Comparison of participant's total APOM scores against age initiated substances***

Figure 4.4 shows the age participants started to abuse either cannabis or alcohol against the level of their APOM scores. The graph indicates that individuals who started abusing substances at a younger age have lower APOM scores. A Pearson correlation indicated a low correlation coefficient of 0.233 but a positive trend.

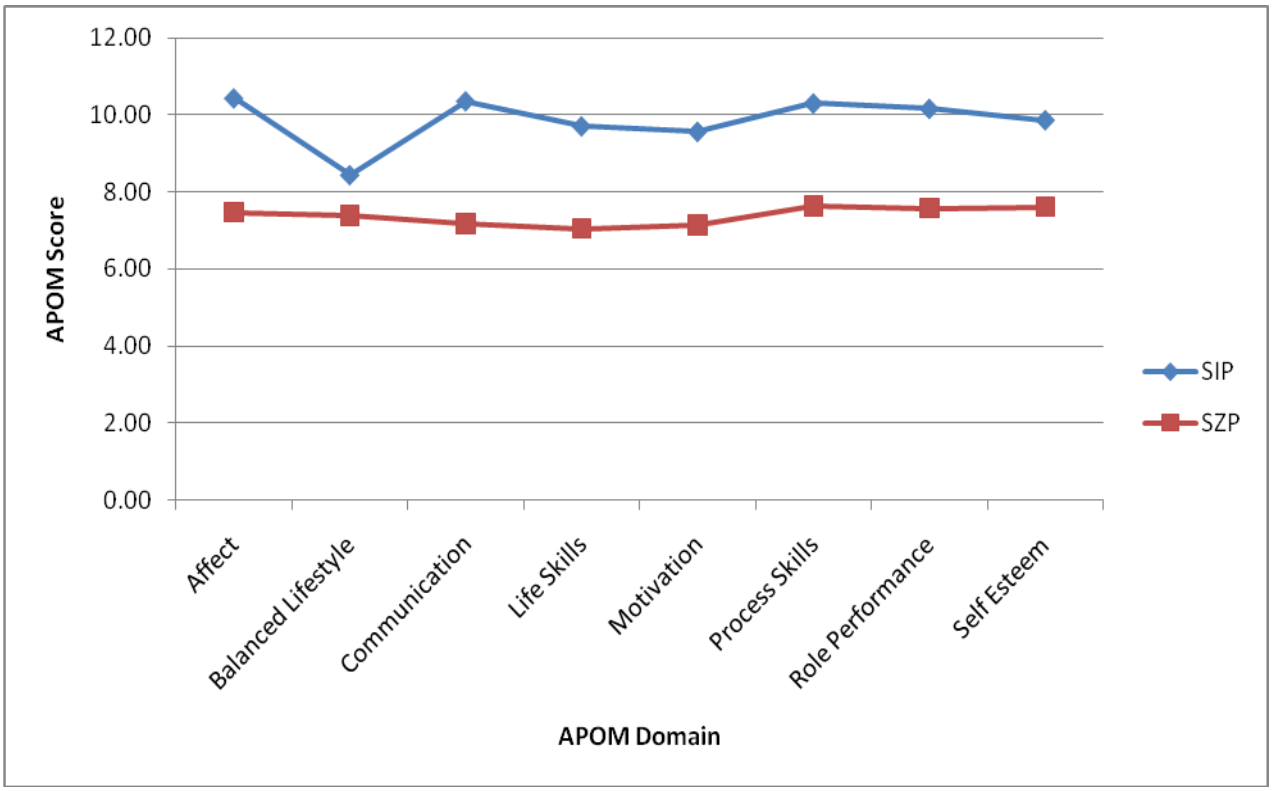



***Figure 4.5: Comparison of participants APOM scores against their diagnosis***

Figure 4.5 displays the APOM scores between the two different diagnoses present within the sample. It can be noted that the participants diagnosed with substance induced psychosis scored a higher level of activity participation on APOM.

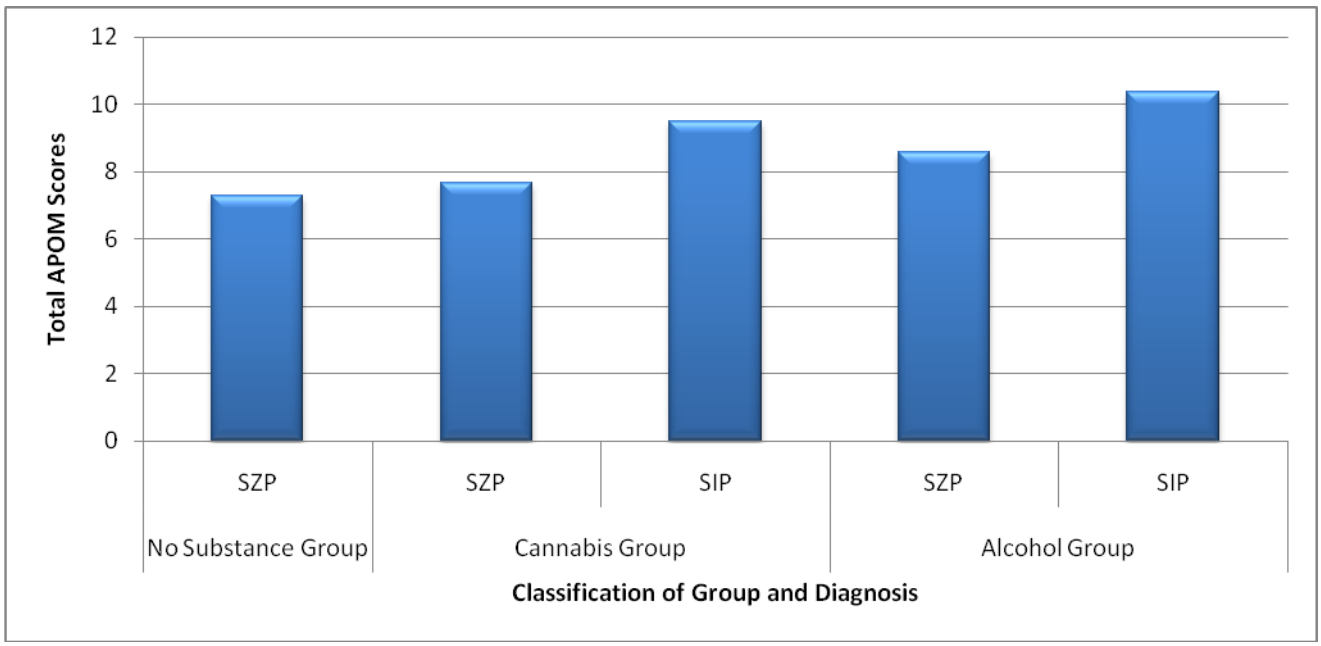



***Figure 4.6: Comparison of total APOM Scores against their diagnosis and group***

Figure 4.6 displays the total APOM scores from each of the two diagnoses present in the sample including schizophrenia (SZP) and substance induced psychosis (SIP). The APOM scores are then compared between the three groups. It is noted that participants diagnosed with schizophrenia had a lower level of activity participation across all three groups.

## *4.3 Hypothesis Testing*

The null hypothesis was that the population mean of the total APOM scores is equal across all three groups.

The null hypothesis stated that there would be no impact of alcohol and cannabis on the level of activity participation. The null hypothesis was rejected with a significant p value at 0.0001 as calculated with ANOVA. This indicates that there is a statistically significant difference between the total APOM score across three groups indicating that alcohol and cannabis did have an affect on the level of activity participation. It should be noted that the differences were highly significant between the alcohol and the no substance group ($p<0.000$), significant between cannabis and no substance group ($p<0.022$) but no significant difference between the alcohol and cannabis groups

($p<0.075$). A highly significant statistical difference was noted in seven of the eight domains with p-values less than 0.0001. Balanced lifestyle was the only domain with a p-value less than 0.05.

### *Table 4.4: P-Values when comparing APOM and MOCA Scores across all Three Groups*

| APOM | P-Value (ANOVA) | | | |
|---|---|---|---|---|
| | p-value when comparing APOM Scores across all 3 groups | p-value in a two-by-two table to indicate the variance between the groups | | |
| Total APOM Score | 0.0001*** | | Cannabis | Alcohol |
| | | Alcohol | 0.075 | - |
| | | No Substances | 0.022* | 0.000*** |
| Affect | 0.0001*** | | Cannabis | Alcohol |
| | | Alcohol | 0.357 | - |
| | | No Substances | 0.007** | 0.000*** |
| Balanced Lifestyle | 0.0368* | | Cannabis | Alcohol |
| | | Alcohol | 0.054 | - |
| | | No Substances | 1.000 | 0.070 |
| Communication/ Interaction Skills | 0.0000*** | | Cannabis | Alcohol |
| | | Alcohol | 0.108 | - |
| | | No Substances | 0.002** | 0.000*** |
| Life skills | 0.0000*** | | Cannabis | Alcohol |
| | | Alcohol | 0.061 | - |
| | | No Substances | 0.023* | 0.000*** |
| Motivation | 0.0004*** | | Cannabis | Alcohol |
| | | Alcohol | 0.144 | - |
| | | No Substances | 0.050* | 0.000*** |
| Process Skills | 0.0002*** | | Cannabis | Alcohol |
| | | Alcohol | 0.188 | - |
| | | No Substances | 0.023* | 0.000*** |
| Role Performance | 0.0000*** | | Cannabis | Alcohol |
| | | Alcohol | 0.032* | - |
| | | No Substances | 0.045* | 0.000*** |
| Self Esteem | 0.0005*** | | Cannabis | Alcohol |
| | | Alcohol | 0.026* | - |
| | | No Substances | 0.314 | 0.000*** |
| | p-value when comparing MOCA Scores across all 3 groups | p-value in a two-by-two table to indicate the variance between the groups | | |
| MOCA | 0.1319 | | Cannabis | Alcohol |
| | | Alcohol | 1.000 | - |
| | | No Substances | 0.285 | 0.247 |

Significance set at p< 0.05*, p< 0.01**, p<0.001***

*All of the above values passed the Bartlett's test for equal variances

The ANOVA test was applied to determine statistical difference and the Bonferroni test of multiple comparisons was used to account for the variances.

## *4.4 Conclusion*

The above chapter describes both the descriptive and the inferential statistics for the study. Certain trends and themes have been highlighted which will be further discussed in the following chapter.

# *CHAPTER 5 Discussion*

## *5.1 Introduction*

A negative impact on the level of activity participation was duly noted in the results detailed in the previous chapter. This chapter shall discuss the previously put forward results and what noticeable factors appear to have contributed towards the level of activity participation.

## *5.2 Decreased Prevalence of Alcohol Abuse in Study*

A total of seventy eight participants were included in the sample for this study. Thirty participants were placed within the cannabis and no substance abuse groups with only eighteen identified as being within the alcohol group. The decreased number of alcohol participants can be attributed to various factors observed by the researcher during the data collection process. According to the referring psychiatrists some alcohol users presented with a mood disorder and therefore had to be excluded from the study. A strong association between substance use with mood and anxiety disorders has also been noted in the literature and this was observed in clinical practice.(80) Most participants indicated that cannabis was cheaper and more easily accessible than alcohol and therefore they used cannabis more frequently. This is a development noted in recent literature as within the South African context the taxes placed on alcohol are increasing, causing cannabis to be more accessible than alcohol.(81) Participants indicated that within the particular age group selected for the study (19 – 29 years), it was seen as being culturally acceptable to use cannabis compared to drinking alcohol which was seen to be more acceptable in a person older than thirty years of age. These factors appeared to have contributed to more participants meeting the criteria for the cannabis group as compared to the alcohol group. This reduced the amount of data available from the alcohol group but the results still produced valuable statistically significant differences which were analyzed and particular trends noted.

## *5.3 Adolescent Initiation of Substances*

Participants in the cannabis group typically started abusing cannabis at an earlier age as compared to the alcohol group. For those participants using cannabis, the average age of onset was less than sixteen years of age and therefore towards the middle of high school. There were, however some extreme values from the data which indicated that some participants started using cannabis as young as twelve years of age. This can be attributed to the previously put forward factor of cannabis being cheaper and more easily accessible than alcohol as well as increased peer pressure to use cannabis. This confirms the previously noted trend of wide spread and increased use of cannabis amongst the Soweto population.(81)

During adolescence an individual is typically still developing his or her cognitive, social, emotional and occupational skills. It has been indicated that certain cognitive and emotional skills are only fully developed by the age of 24 years including abstract reasoning (82). The age when participants in the cannabis and alcohol group started abusing the substance was correlated against the overall APOM scores. It was noted that participants who started using cannabis or alcohol at a younger age typically had a lower APOM score. This suggests that adolescence initiated substance abuse does have a negative impact on an individual's level of activity participation. The earlier a person initiates the substance, the greater the number and severity of developing adolescent skills are affected and therefore, the poorer are occupational outcomes in adulthood.(21)

## *5.4 Current Ages of Participants*

In this study sample, the participants within the cannabis group were at the time of assessment of a younger age compared to those in the alcohol group. This indicates that within the sample, the cannabis users met the criteria for abuse or dependence at a much younger age compared to alcohol users. Meeting the criteria for substance abuse or dependence at a younger age appears to have contributed towards the cannabis group having a lower level of activity participation compared to the alcohol group. This confirms what had been documented in previous research that earlier age of onset and increased

severity of use of cannabis does negatively impact on an individual's level of occupational performance.(21,37, 38)

Participants within the no substance group displayed the widest range of their current age indicating that schizophrenia is prevalent throughout the age band selected and that early adulthood is the expected norm, according to the DSM-IV, for the onset of schizophrenia.(6)

## *5.5 Substance Abuse versus Substance Dependence*

Within the study sample, the majority of the participants were classified as having substance abuse as compared to substance dependence. This correlates with literature as substance dependence is described as the more harmful and debilitating substance use disorder compared to abuse and therefore fewer participants would be assumed to have a dependence diagnosis. (6) It should, however, be noted that this data should be interpreted with caution as during the data collection process it was observed that some of the participants did meet the criteria for substance dependence, according to the researcher, but were not classified accordingly on the DSM-IV by the referring psychiatrist. It can be inferred that the interpretation of the criteria between substance abuse and dependence lends itself to subjectivity and therefore makes the distinction between the two levels difficult. Cannabis withdrawal symptoms are also non specific and therefore difficult to identify whether they meet the criteria for dependence. Within the acute setting the distinction between abuse and dependence does not overtly change the initial management of the individual and therefore owing to time constraints and high patient numbers, this particular distinction does not impact on immediate medical management. The distinction, however, did facilitate the understanding of the degree of impact on the individual's level of functioning. This subjectivity and discrepancy has been corrected with the recent edition of DSM where within the DSM-5 the criterion for substance abuse and dependence has combined into one diagnosis. The distinction between abuse and dependence is no longer made and individuals are classified together as having a substance use disorder. (14)

The participants within the study who were diagnosed with substance dependence mostly fell into the cannabis group. This can be assumed to be due to the previously discussed factors of the easier accessibility of cannabis and earlier age of initiation of cannabis.(81) It also correlates to the lower level of activity participation noted in the cannabis group compared to the alcohol group as a participant meeting the criteria for substance dependence according to the DSM-IV should experience more disruption and deterioration in their occupational functioning. (6)

## *5.6 Level of Activity Participation*

A statistically significant difference was found between the three groups across all of the APOM scores. The clinical significance of this is that firstly, the alcohol group consistently presented with a higher level of activity participation across all eight of the APOM domains. This indicates a better performance in life skills, communication, affect, motivation, balanced lifestyle, self esteem, role performance and process skills compared to the cannabis and no substance abuse group. From this data, it can be inferred that alcohol does have a negative impact on occupational performance as the APOM scores for this group were below the expected norm for an adult population however the impact is not as severe on the level of activity participation as compared to cannabis. This correlates with research indicating that cannabis does cause severe neurocognitive changes in the brain which negatively impact on an individual's functioning. (40, 41)

Balanced life style was the only domain that was not significantly different between the three groups, indicating that all three groups experienced problems in this domain. This came as an expected result as lifestyle problems are often reported in literature as the causative factors for substance abuse and a possible precursor to mental illness.(83)

## *5.7 Comparison of APOM Domains*

The differences between the eight APOM domains were analyzed and compared between all three groups.

Motivation was severely impacted across all the groups but mostly affected the no substance abuse group. All of these participants were diagnosed with schizophrenia and this finding is therefore in agreement with the DSM-IV criteria for schizophrenia, indicating amotivation as a clinical symptom of this diagnosis. (6, 43) This lack of motivation and drive demonstrated as being one of the founding causal factors to the deterioration in activities of daily living and higher order life skills. Decreased motivation within the other two groups also had a negative impact on the individual's level of performance skills and may further hinder the individual's ability to engage in other constructive activities such as work or studies even in the absence of using substances.

Self esteem was noted as being a poorer performing domain specifically within the cannabis group. This demonstrates the individual's possible vulnerability to initially succumbing to peer pressure and using substances, as well as the reduced ability to abstain from cannabis as the individual may feel that he needs cannabis in order to feel good about himself. This therefore has implications towards the initiation and the ability to abstain from substances. Diminished self esteem and reliance on substances to compensate may negatively impact on the individual's motivation and being able to realistic evaluate and set into motion goals or plans for the future.

Process skills, although higher in the alcohol group compared to the other two groups, were in the lower half of the average domain scores. These are the cognitive abilities and work performance skills needed to execute any work task. This demonstrates a decline in certain cognitive functions within the alcohol group including aspects such as concentration, adaptation and concept formation. This is congruent with the literature determining that there is an association with alcohol use and cognitive decline (84). The no substance abuse group scored the lowest on the process skills domain when compared to the other two groups. This indicates that psychotic disorders have a severe impact on an individual's cognitive functioning and this is directly linked to poor work performance. A decline in these skills may also hinder the therapeutic process as the individual's learning abilities are negatively affected. This hinders the individual from understanding

the therapeutic process and being able to improve or adapt his lifestyle in order to improve occupational performance.

The life skills domain incorporates components such as grooming, budgeting, conflict management, stress management, vocational skills, assertiveness, parenting, safety, problem solving, use of transport and taking care of your medication. A decline in these skills was noted across all three groups but more severely within the no substance abuse group. The life skills of stress management, care of medication and vocational skills were the most affected in this group. This directly contributes to the numerous relapses due to the defaulting of medication and poor constructive use of time, which is noted in the clinical setting for this population. Poor cognitive functioning and decreased motivation reduced the participant's ability to perform and complete these skills independently. Poor performance in these skills also contributes to a decline in role performance and balanced lifestyle.

Communication and interaction skills were the strongest domain within the alcohol group but the second lowest scoring domain in the no substance abuse group. This is linked to the no substance abuse group having a predominant diagnosis of schizophrenia. Individual's diagnosed with schizophrenia typically present with a blunted affect, decrease emotional expression and psychomotor retardation. (6) These symptoms directly impact on the individual's social skills and ability to communicate with others and express their views or opinions.

## *5.8 Prevalence of Type of Psychotic Disorder*

Within the sample only two types of psychotic disorders were present that of substance induced psychosis and schizophrenia. This is expected within the sample size of the study as other psychotic disorders are relatively rare and not often seen in practice. (6) Within the no substance abuse group only the diagnosis of schizophrenia was present within the sample. The majority of the participants diagnosed with substance induced psychosis were found within the alcohol group as compared to an almost even divide between substance induced psychosis and schizophrenia within the cannabis group. This

is congruent with the literature that indicates that cannabis use may be a precursor to the development of schizophrenia and thus it is more predominant in the cannabis group (85). It has also been documented that alcoholism has been linked to co morbid mental disorders; however, cannabis and other substances have been shown to have higher mental illness co morbidity rates than alcohol. (86).

## *5.9 Impact of Type of Psychotic Disorder*

The major differences between the groups were portrayed between the alcohol and no substance abuse group. This identifies that individuals falling within the no substance group had the lowest level of activity participation and performed poorly across all eight domains. This may be attributed to the type of diagnosis present within this group and not merely the absence of substances.

The lower level of activity participation within the no substance abuse group appears to be linked to the type of diagnosis associated with this group as all the participants were diagnosed with schizophrenia. This supports the criteria put forward by the DSM-IV which indicates that individuals diagnosed with schizophrenia will experience a chronic and deteriorating level of activity participation throughout their lifespan. However, the symptoms experienced by an individual diagnosed with substance induced psychosis should subside relatively quickly after the cessation of the substance and the individual should then return to baseline level of functioning. (6) This is portrayed by the APOM scores as those individuals diagnosed with substance induced psychosis performed better across all domains compared to those diagnosed with schizophrenia. This infers that clinicians will need to take into consideration the type of psychiatric diagnosis as well as type of substance when considering an individual's prognosis and goals for intervention.

## *5.10 Level of Activity Participation in Dual Diagnosis*

Chronic use of alcohol and cannabis has been shown in past literature to cause cognitive impairments in adults.(21) Studies which have been conducted within the last five years, have indicated that amongst both healthy individuals and patients with schizophrenia, there appears to be little difference in cognitive performance between

cannabis users and non-users. This research is therefore suggesting that cannabis use has only subtle effects on the neurocognitive performance (58, 59) and that co morbid alcohol or cannabis abuse or dependence has limited effects on cognitive performance in individuals already presenting with a psychotic disorder.(57)

The MOCA is a screening tool used to assess an individual's basic cognitive functions. This tool was used to assist the researcher with levelling the client on the APOM in terms of their process skills.

The MOCA was unable to determine statistically significant differences amongst the three groups which could be an indication that the MOCA is not a sensitive enough tool to note changes in an individual's cognitive functions within the mental health population. It is therefore, not possible to use this data to accurately compare the cognitive functions between the three groups. The MOCAs limitations in terms of sensitivity need to be noted as it is been described only as a screening tool and therefore the results cannot be inferred as a full accurate assessment of all cognitive functions. It can however, be stated that across all three groups the average scores were below the expected norm for an adult population and overall the cannabis group was levelled as having a slightly better cognitive performance than the no substance group diagnosed with schizophrenia.

The more reliable data which can be used to correlate similar trends as noted in the recent literature is the total APOM scores or the individual's overall level of occupational performance. When comparing the total APOM scores against schizophrenia and substance induced psychosis within each of the three groups, it was noted that the cannabis group diagnosed with schizophrenia did achieve a slightly higher level of activity participation than the no substance abuse group or purely schizophrenia diagnosis group. The degree of difference is not significant but the data does correlate to the research indicating that cannabis may only have subtle effects on the level of activity participation in individuals who are diagnosed already with schizophrenia.

A greater degree of difference was actually noted in the alcohol group. Participants diagnosed with alcohol abuse and schizophrenia performed better than both the no

substance abuse group and the cannabis group diagnosed with schizophrenia. This infers that alcohol may have a lower impact on affecting a participant's level of activity participation when compared to cannabis and schizophrenia. The current age of the participants needs to be considered as the current limited cognitive decline may be due to the alcohol use occurring when the individual is in early adulthood and long term consequences may only be more profound into late adulthood. There is also the possibility of the participants within the cannabis and alcohol abuse group having a lower vulnerability to psychosis and a better response to psychotropic medication which may be the reason behind the better cognitive performance. It should also, however, be noted that there was a decreased number of participants in the alcohol group compared to the other two groups and this limits the reliability of the information.

## *5.11 Limitations of Study*

The practical difficulties of accessing drug testing before each functional assessment made the ability to determine whether the participant was under the influence of substances subjective. The use of substances might have been "missed" which could have impacted on the scores obtained from the APOM measure. This could possibly lead to the scores attributed to the client's level of activity participation being of a lower level than what would be actually presented by the client as the client at the time of the assessment was under the influence of substances. This may therefore have produced inaccurate results.

A small sample size provided the researcher only with enough supporting evidence to reject the null hypothesis of this study. The findings may be generalised to the population at CHBAH. This study can however be repeated in similar settings and findings be compared. There were certain difficulties around diagnosing participants either substance abuse or substance dependence and this may have hindered the validity of the data in terms of level of substance use.

The participant's level of education was not considered and this may have had an impact on their cognitive functioning and their ability to understand the MOCA.

## *5.12 Conclusion*

The above chapter discussed the major findings and implications from the previously put forward results. The following chapter will provide the implications for practice as well the final conclusion and recommendations.

# *CHAPTER 6 Conclusion*

## *1. Introduction*

The impact of adolescence initiated alcohol and cannabis abuse/dependence on the level of adulthood activity participation in the CHBAH male population, was the main question put forward by the researcher. The researcher has achieved this objective by both determining the impact of both substances and comparing the differences on the level of activity participation. In keeping with the literature that states that cannabis and alcohol abuse does have negative consequences on an individual's level of functioning, this research study has proved that there is a decline in the level of activity participation by the APOM scores. This research report has put forward the methodology, results and key discussion points noted from the study. This chapter will conclude the main trends as well as the implications for practice and recommendations.

## *2. Implications for Clinical Practice and Recommendations*

As a result of what has been discussed the following recommendations for clinical practice are put forward.

Alcohol abuse, cannabis abuse and schizophrenia have all shown in this research study, to have a negative impact on an individual's level of activity participation. Cannabis appears to have a more profound negative impact on activity participation as compared to alcohol, with domains such as motivation, balanced lifestyle and self esteem being the most affected. Schizophrenia appears to have the most detrimental impact compared to both cannabis and alcohol. Occupational therapists should therefore take into consideration the type of substance that the individual is using, when they started using and the type of psychiatric disorder, in order to be able to tailor a more realistic and specific intervention programme. The development of intervention programmes based on the individuals APOM levels may also produce better occupational outcomes as the individuals within such a programme will have similar occupational and cognitive

functioning levels. Placing individuals within a programme where the substance of choice, diagnosis and APOM level are similar will facilitate stronger cohesion and promote positive support systems in order to improve occupational performance and prevent relapse.

The use of the APOM as an outcome measure acted as a sound recording tool for the occupational therapy assessment in this research study. The information obtained was easy to understand and the values allowed the researcher to accurately compare the level of activity participation between the different substance and diagnoses. The use of numerical values to convey occupational performance allowed for better communication amongst the multidisciplinary team and it provided the participants with a concrete measure of their performance. The importance of occupational therapists documenting or recording their intervention has become an area of focus within the last few years owing to the proposed implementation of National Health Insurance. It is therefore recommended that occupational therapists incorporate an outcome measure into their intervention with each patient and to consider using the APOM as the recording tool as it has proved to be reliable, valid and efficient.

Within the clinical setting, due to the limited bed space available at CHBAH, there is a high turnover of patients and this leads to individual's being discharged on the APOM level of six to nine which poses serious negative implications on the individual and his/her family. These individuals have limited insight into their condition and are not able to engage in the open labour market. This creates the revolving door syndrome in that individual's have numerous readmissions as they are discharged at a stage when they do not yet fully understand their psychiatric disorder and this leads to them defaulting on their medication or returning to abuse substances. Occupational therapists need to be aware of these practical difficulties within a government setting and ensure that adequate follow up or family intervention is executed. Community resource centres, nongovernmental organizations (e.g. SANCA) and protective workshops should be utilised in order to promote better or maintain current occupational performance after discharge and prevent further relapse.

The ability for occupational therapists to be involved in community prevention programs is also promoted through this research, as the occupational therapist would be able to indicate the consequences of substance abuse to the adolescent population. The APOM allows for an easy to understand representation of the negative impact on life skills and it can be presented that the study participants were all South African citizens. This may facilitate stronger buy in from the South African youth and promote abstinence from substances.

## *3. Conclusion*

Substance abuse has been documented in the literature to have serious adverse affects on an individual's occupational and social functioning. Limited evidence was present within the South African population to demonstrate these effects and to establish exactly which skills are more or less affected.

From this study, it can be inferred that early substance abuse does have a negative effect on an individual's level of activity participation into adulthood. The earlier an individual initiates the substance use the increased number of developing skills are affected and as a result poorer occupational outcomes are noted in adulthood. Within the sample, cannabis use was started at a younger age and an increased number of participants utilized more cannabis as compared to alcohol. This is attributed to reduced costs, easy accessibility and cultural acceptance of cannabis use for individuals between the ages of 15 – 30 years. Cannabis compared to alcohol, demonstrated to have a more negative and severe impact on the level of performance. When cannabis and alcohol abuse was compounded with schizophrenia it did not appear to further reduce the level of activity participation but rather individual's only diagnosed with schizophrenia showed to have a lower level of activity participation.

Within the South African context, it is highly probable that substance abuse will continue to be a major problem amongst the youth and young adult populations. The ever increasing use of substances will lead to an increase in mental illness as well as deterioration in occupational performance. Occupational therapists are well equipped to

assist these individuals as they are specifically trained to gain a holistic view of both the person and their environment. This is a vital connection and forms an interlinking cycle when addressing substance abuse disorders. Holistic, specific and occupation based interventions programmes, will promote a better prognosis for these individuals, diminish the negative consequences of substances and provide individuals with the skills to achieve their highest level of occupational performance.

*God grant me the serenity*
*to accept the things I cannot change;*
*courage to change the things I can;*
*and wisdom to know the difference* - *Reinhold Niebuhr*

# *References*


1. Drake R. Dual Diagnosis. *Psychiatry* 2007;6(9):381-4.
2. Dixon L. Dual diagnosis of substance abuse in schizophrenia: prevalence and impact on outcomes. *Schizophrenia Research* 1999;35(1):S93-S100.
3. Meek PS, Clark HW, Solana VL. Neurocognitive Impairment: The Unrecognized Component of Dual Diagnosis in Substance Abuse Treatment. *Journal of Psychoactive Drugs* 1989;21(2):153-60.
4. Brown SA, Tapert SF. Adolescence and the trajectory of alcohol use: basic to clinical studies. *Academy of Sciences* 2004;1021:234-44.
5. Stein D, Herman A, Moomal H, Heeringa SG, Kessler RC, Williams DR. Lifetime prevalence of psychiatric disorders in South Africa. B*ritish Journal of Psychiatry* 2008;192(1):112-7.
6. Robertson B, Allwood C, Gagiano C. *Textbook of Psychiatry for Southern Africa*. 1 ed. Oxford, New York: Oxford University Press; 2001 2001. 196 - 8 p.
7. Report TUNWD. *The United Nations World Drug Report*. 2011; Available from: http://www.unodc.org/documents/data-and-analysis/WDR2011/ World_Drug_Report_2011 ebook.pdf
8. Hall W, Degenhardt, L. Adverse health effects of non-medical cannabis use. *The Lancet* 2009;374(9698):1383-91.
9. Parry CD, Pluddemann A, Steyn K, Bradshaw D, Norman R, Laubscher R. Alcohol Use in South Africa: Findings from the First Demographic and Health Survey. *Journal of Studies on Alcohol and Drugs* 2005;66(1):91-7.
10. Reddy SP, Panday S, Swart D, Jinabhai CC, Amosun SL, James S et al. Umthenthe *Uhlaba Usamila - The South African Youth Risk Behaviour Survey 2002*. Cape Town: South African Medical Research Council, 2003. Available from: ttp://www.mrc.ac.za/healthpromotion/YRBSpart1.pdf
11. Pitkänen T, Pulkkinen L. Age of onset of drinking and the use of alcohol in adulthood: A follow-up study from age 8-42 for females and males. *Addiction* 2005;100:652–61.
12. Bonomo L, Coffey C, Carlin JB, Patton GC. Teenage drinking and the onset of alcohol dependence: A cohort study over seven years. *Addiction* 2004;99:1520–8.
13. Sadock B, Saddock V. *Synopsis of Psychiatry: Behavioral Sciences/ Clinical Psychaitry.* 10 ed. New York: Lippincott Williams and Wilkins; 2007.
14. Martin C, Chung T, Langenbucher J. How should we revise diagnostic criteria for substance use disorders in the DSM-V? *Journal of Abnormal Psychology* 2008;117(3):561-75.
15. American Psychiatric Association. S*ubstance-Related and Addictive Disorders* America: American Psychiatric Publishing; 2013 [cited 2014 03/08/2014].
16. Grant JD, Scherrer JF, Lynskey MT, Lyons MJ, Eisen SA, Tsuang MT et al. Adolescent alcohol use is a risk factor for adult alcohol and drug dependence: evidence from a twin design. *Psychological Medicine* 2006;36(1):109-18.
17. Crouch R, Alers V. *Occupational Therapy in Psychiatry and Mental Health*. London: Whurr Publishers; 2005.

18. Guerri C, Pascual M. Mechanisms involved in the neurotoxic, cognitive, and neurobehavioral effects of alcohol consumption during adolescence. *Alcohol* 2010;44(1):15-26.
19. Bates ME, Labouvie E. Adolescent risk factors and the prediction of persistent alcohol and drug use into adulthood. *Alcoholism, clinical and experimental research* 1997;21(5):944-50.
20. Best D, Gross S, Manning V, Gossop M, Witton J, Strang J. Cannabis use in adolescents: the impact of risk and protective factors and social functioning. *Drug and Alcohol Review* 2005;24(6):483-8.
21. Thoma RJ, Monnig MA, Lysne PA, Ruhl DA, Pommy JA, Bogenschutz M et al. Adolescent substance abuse: the effects of alcohol and marijuana on neuropsychological performance. *Alcoholism: Clinical and Experimental Research* 2011;35(1):39-46.
22. American Academy of Child and Adolescent Psychiatry. *Teens: Alcohol And Other Drugs.* [Online] Available from: http://aacap.org/page.ww?name=Teens:+Alcohol+and+Other+Drugs&section=Facts+for+Families [Accesed 10th July2011]
23. Iso-Ahola SE, Crowley ED. Adolescent Substance Abuse and Leisure Boredom. *Journal of Leisure Research* 1991;23(3):260-71.
24. Sharp E, Coffman D, Caldwell L, Smith E, Wegner L, Vergnani T, Mathews C. Predicting substance use behavior among South African adolescents: The role of leisure experiences across time. *International Journal of Behavioral Development* 2011;35(4):343-51.
25. Spano MS, Fadda P, Fratta W, Fattore L. Cannabinoid-opioid interactions in drug discrimination and self-administration: effect of maternal, postnatal, adolescent and adult exposure to the drugs. *Current Drug Targets* 2010;11(4):450-61.
26. Clark DB, Thatcher DL, Tapert SF. Alcohol, psychological dysregulation, and adolescent brain development. *Alcoholism, clinical and experimental research*. 2008;32(3):375-85.
27. Bartley PC, Rezvani AH. Alcohol and cognition - consideration of age of initiation, usage patterns and gender: a brief review. *Current drug abuse reviews* 2012;5(2):87-97.
28. Maldonado-Devincci AM, Badanich KA, Kirstein CL. Alcohol during adolescence selectively alters immediate and long-term behavior and neurochemistry. *Alcohol* 2010;44(1):57-66.
29. Goldman MS, Williams DL, Klisz DK. Recoverability of psychological functioning following alcohol abuse: prolonged visual-spatial dysfunction in older alcoholics. *Journal of consulting and clinical psychology* 1983;51(3):370-8.
30. Levola J, Aalto M, Holopainen A, Cieza A, Pitkänen T. Health-related quality of life in alcohol dependence: A systematic literature review with a specific focus on the role of depression and other psychopathology. *Nordic Journal of Psychiatry* 2014(68); 369-384.
31. Volk RJ, Cantor SB, Steinbauer JR, Cass AR. Alcohol Use Disorders, Consumption Patterns, and Health-Related Quality of Life of Primary Care Patients. *Alcoholism: Clinical and Experimental Research* 1997;21(5):899-905.

32. Hendrie HC, Gao S, Hall KS, Hui SL, Unverzagt FW. The relationship between alcohol consumption, cognitive performance, and daily functioning in an urban sample of older black Americans. *Journal of the American Geriatric Society* 1996;44(10):1158-65.
33. Newcomb MD, Bentler PM. Impact of adolescent drug use and social support on problems of young adults: A longitudinal study. *Journal of Abnormal Psychology* 1988;97(1):64-75.
34. Brook JS, Balka EB, Whiteman M. The risks for late adolescence of early adolescent marijuana use. *American Journal of Public Health* 1999;89(10):1549-54.
35. Brook JS, Lee JY, Brown EN, Finch SJ, Brook DW. Developmental trajectories of marijuana use from adolescence to adulthood: personality and social role outcomes. *Psychological Reports* 2011;108(2):339-57.
36. Fergusson DM, Horwood LJ, Swain-Campbell NR. Cannabis use and psychosocial adjustment in adolescence and young adulthood. *Addiction* 2002;97(9):1123-35Solowij N, Stephens RS, Roffman RA. Cognitive functioning of long-term heavy cannabis users seeking treatment. *Journal of the American Medical Association* 2002;287(9):1123-31.
37. Brook JS, Adams RE, Balka EB, Johnson E. Early adolescent marijuana use: risks for the transition to young adulthood. *Psychological Medicine* 2002;32(1):79-91.
38. Fergusson DM, Boden JM. Cannabis use and later life outcomes. *Addiction* 2008;103(6):969-76.
39. Fergusson DM, Horwood LJ, Beautrais AL. Cannabis and educational achievement. *Addiction* 2003;98(12):1681-92.
40. Solowij N, Stephens RS, Roffman RA. Cognitive functioning of long-term heavy cannabis users seeking treatment. *Journal of the American Medical Association* 2002;287(9):1123-31.
41. Jacobsen LK, Mencl WE, Westerveld M, Pugh KR. Impact of Cannabis Use on Brain Function in Adolescents. *Annals of the New York Academy of Sciences* 2004;1021(1):384-90.
42. Baumrind K, Moselle A. A development perspective on adolescent drug abuse. *Advances in Alcohol & Substance Abuse* 1985;4(3-4):41-66.
43. Lynskey M, Hall W. The effects of adolescent cannabis use on educational attainment: a review. *Addiction* 2000;95(11):1621-30.
44. Smith J, Hucker S. Schizophrenia and substance abuse. *The British Journal of Psychiatry.* 1994;165(1):13 to 21.
45. Alers V, Crouch R. *Occupational Therapy: An African Perspective*. Johannesburg: Sarah Shorten Publishers; 2010.
46. Shrier LA, Harris SK, Kurland M, Knight JR. Substance use problems and associated psychiatric symptoms among adolescents in primary care. *Peadiatrics* 2003;111:699-705.
47. Compton MT, Kelley ME, Ramsay CE, Pringle M, Goulding SM, Esterberg ML et al. Association of Pre-Onset Cannabis, Alcohol, and Tobacco Use with Age at Onset of Prodrome and Age at Onset of Psychosis in First-Episode Patients. *American Journal Psychiatry* 2009;166:1251–7.

48. Deas D. Adolescent substance abuse and psychiatric comorbidities. *Journal of Clinical Psychiatry* 2006;67(7):18-23.
49. Hasin DS, Stinson FS, Ogburn E, Grant BF. Prevalence, correlates, disability, and comorbidity of DSM-IV alcohol abuse and dependence in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry* 2007;64(7):830-42.
50. *The American Heritage® Medical Dictionary*. Houghton Mifflin Company; 2007. [Online] Available from: http://medical-dictionary.thefreedictionary.com/psychosis [Accesed 10th July 2011]
51. Bowie CR, Harvey PD. Cognition in schizophrenia: impairments, determinants, and functional importance. *Psychiatric Clinics of North America* 2005;28(3):613-33.
52. Tsang HWH, Leung AY, Chung RCK, Bell M, Cheung W. Review on vocational predictors: a systematic review of predictors of vocational outcomes among individuals with schizophrenia: an update since 1998. *Australian & New Zealand Journal of Psychiatry* 2010;44(5):495-504.
53. Donohoe G, Corvin A, Robertson IH. Are the cognitive deficits associated with impaired insight in schizophrenia specific to executive task performance? *Journal of Nervous and Mental Disease* 2005;193(12):803-8.
54. Leitman PS, Higgins B, Foxe J, Silipo G, Javitt D. Sensory Deficits and Distributed Hierarchical Dysfunction in Schizophrenia. *American Journal of Psychiatry* 2010;167:818-27.
55. Ursu S, Kring AM, Gard MG, Minzenberg MJ, Michael J, Yoon JH et al. Prefrontal and Cortical Deficits and Impaired Cognition-Emotion Interactions in Schizophrenia. *American Journal of Psychiatry* 2011;168:276-85.
56. Sparks A, McDonald S, Lino B, O'Donnell M, Green MJ. Social cognition, empathy and functional outcome in schizophrenia. *Schizophrenia Research* 2010;122(1-3):172-8.
57. Liraud F, Verdoux H. Effect of comorbid substance use on neuropsychological performance in subjects with psychotic or mood disorders. *Encephale* 2002;28(2):160-8.
58. Schnell T, Koethe D, Daumann J, Gouzoulis-Mayfrank E. The role of cannabis in cognitive functioning of patients with schizophrenia. *Psychopharmacology* 2009;205(1):45-52.
59. Scholes KE, Martin-Iverson MT. Cannabis use and neuropsychological performance in healthy individuals and patients with schizophrenia. *Psychological Medicine* 2010;40(10):1635-46.
60. Yücel M, Bora E, Lubman DI, Solowij N, Brewer WJ, Cotton SM et al. The Impact of Cannabis Use on Cognitive Functioning in Patients With Schizophrenia: A Meta-analysis of Existing Findings and New Data in a First-Episode Sample. *Schizophrenia Bulletin* 2012;38(2):316-30.
61. Smith E, Palen L-A, Caldwell L, Flisher A, Graham J, Mathews C et al. Substance Use and Sexual Risk Prevention in Cape Town, South Africa: An Evaluation of the HealthWise Program. *Prevention Science* 2008;9(4):311-21.
62. Larimer ME, Cronce JM. Identification, prevention and treatment: a review of individual-focused strategies to reduce problematic alcohol consumption by college students. *Journal of studies on alcohol* (Supplement) 2002(14):148-63.

63. Magura S, Cleland CM, Tonigan JS. Evaluating Alcoholics Anonymous's effect on drinking in Project MATCH using cross-lagged regression panel analysis. *Journal of Studies on Alcohol and Drugs* 2013;74(3):378-85.
64. Weisner C, Mertens J, Tam T, Moore C. Factors affecting the initiation of substance abuse treatment in managed care. *Addiction* 2001;96(5):705-16.
65. Le Berre AP, Rauchs G, La Joie R, Segobin S, Mezenqe F, Boudehent C et al. Readiness to change and brain damage in patients with chronic alcoholism. *Psychiatry research* 2013;213(3):202-9.
66. Kim KM, Kim JS, Kim GJ, Kim SS, Jung JG, Kim SM et al. The readiness to change and insight in alcohol dependent patients. *Journal of Korean Medical Science* 2007;22(3):453-8.
67. Twamley EW, Jeste DV, Bellack AS. A review of cognitive training in schizophrenia. *Schizophrenia Bulletin* 2003;29(2):359-82.
68. Lefio LA, Villarroel SR, Rebolledo C, Zamorano P, Rivas K. Effective interventions in the problematic use of alhocol and other drugs. *Revista Panamericana de Salud Pública* 2013;34:257-66.
69. Falloon IRH, Held T, Roncone R, Coverdale JH, Laidlaw TM. Optimal treatment strategies to enhance recovery from schizophrenia. *Australian & New Zealand Journal of Psychiatry* 1998;31(1):43-9.
70. Bustillo J, Lauriello J, Horan W, Keith S. The psychosocial treatment of schizophrenia: an update. *American Journal of Psychiatry* 2001;158(2):163-75.
71. Korn C. *A Psycho educational Program for the Chronically Mentally Ill.* [Online] Available from: http://cme.medscape.com/viewarticle/418620 [Accessed 29th June 2009]
72. Rund BR, Moe L, Sollien T, Fjell A, Borchgrevink T, Hallert M et al. The Psychosis Project: outcome and cost-effectiveness of a psycho educational treatment programme for schizophrenic adolescents. *Acta Physchiatrica Scandanavica* 2007;83:211-8.
73. Poon MY, Siu AM, Ming SY. Outcome analysis of occupational therapy programme for persons with early psychosis. *Work* 2010;37(1):65-70.
74. Buchain PC, Vizzotto ADB, Henna Neto J, Elkis H. Randomized controlled trial of occupational therapy in patients with treatment-resistant schizophrenia. *Revista Brasileira de Psiquiatria* 2003;25(1):26-30.
75. Mahoney JL, Stattin H. Leisure activities and adolescent antisocial behavior: The role of structure and social context. *Journal of adolescence* 2000(2):113 – 27.
76. Kavanagh DJ, Waghorn G, Jenner L, Chant DC, Carr V, Evans E et al. Demographic and clinical correlates of comorbid substance use disorders in psychosis: multivariate analyses from an epidemiological sample. *Schizophrenia Research* 2004;66(6):115 - 24.
77. Nasreddine ZS, Phillips NA, Bédirian V, Charbonneau S, Whitehead V, Collin I et al. The Montreal Cognitive Assessment, MoCA: A Brief Screening Tool For Mild Cognitive Impairment. *Journal of the American Geriatrics Society* 2005;53(4):695-9.
78. Smith T, Gildeh N, Holmes C. The Montreal Cognitive Assessment: Validity and Utility in a Memory Clinic Setting. *La Revue canadienne de psychiatrie* 2007;52(5).

79. Casteleijn D. *Development of an outcome measure for occupational therapists in mental healthcare practices*. PhD thesis: University of Pretoria, South Africa; 2010. Available from: upetd.up.ac.za/thesis/available/etd-02102011-143303/
80. Merikangas KR, Mehta RL, Molnar BE, Wlaters EE, Swendsen JD, Aquilar-Gaziola S et al. Comorbidity of substance use disorders with mood and anxiety disorders: Results of the international consortium in psychiatric epidemiology. *Addictive Behaviors* 1998;23(6):893-907.
81. Malose L. *The prevalence of alcohol and other drug use amongst school learners in Alexandra Township.* Wits Institutional Repository environment on WIReDSpace: Witwatersrand; 2006. Available from http://hdl.handle.net/10539/241
82. Steinberg L. Cognitive and affective development in adolescence. *Trends in Cognitive Sciences* 2005;9(2):69-74.
83. Wegner L, Fsisher A. Leisure boredom and adolescent risk behaviour: a systematic literature review. *Journal of Child & Adolescent Mental Health* 2009;1(21):1-29.
84. Sullivan EV, Rosenbloom MJ, Pfefferbaum A. Pattern of Motor and Cognitive Deficits in Detoxified Alcoholic Men. *Alcoholism: Clinical and Experimental Research* 2000;24(5):611-21.
85. Andréasson S, Allebeck P, Engstrom A, Rydberg U. Cannabis ans Schizophrenia. A Longitudinal Study of Swedish Conscripts. *The Lancet* 1987;330(8574):1483-6.
86. Regier DA, Farmer ME, Rae DS, Locke BZ, Keith SJ, Judd LL, Goodwin FK. Comorbidity of mental disorders with alcohol and other drug abuse: Results from the epidemiologic catchment area (eca) study. *Journal of the American Medical Association* 1990;264(19):2511-8.

# *Appendix A*

APOM
Activity Participation Outcome Measure

## Occupational Therapy Report

**Organisation Name:** Chris Hani Baragwanath Hospital
**Patient Name:** Participant 1
**Patient Age:** 27
**Patient Gender:** Male

**Date Of Assessment:** 2013/07/05
**Date Of Admission:** 2013/02/21
**Level Of Creative Ability:** Self Presentation

## Assessment Detail

### Process Skills

| | |
|---|---|
| **Adaptation** | Engage in tasks to explore, needs prompting to anticipate or correct for errors but no learning from the consequences of errors. |
| **Attention** | Focuses attention for short periods, easily distracted. |
| **Concept Formation** | Identifies elementary concepts e.g. body, colour and numbers.Knows functions and characteristics of elementary concepts. |
| **Organizing Space and Objects** | Willing to explore with materials and tools but no intention to organize the workspace. Area to be structured by therapist. No attempt to restore workspace. |
| **Pace** | Inconsistent pace or task execution, slow or poor rate and poor accuracy. |
| **Skills** | Appropriate handling but poor maneuvering of tools. Uses tools and materials according to their intended purposes. |
| **Task Concept** | Beginning to understand the task and could identify with task. Will begin with a task but not able to plan logical order of the task independently. Task concept unconsolidated. |
| **Tools and Materials** | Basic knowledge of intrinsic properties of materials with poor selection and impulsive use of tools and materials for the task. |

### Communication/Interaction skills

| | |
|---|---|
| **Awareness of social norms** | Awareness of basic social norms emerging but unable to conform to social norms, forms a relationship for egocentric reasons. |
| **Establishing rapport** | No interest to form rapport with others and unaware of others' needs and requests. |
| **Exchanging information** | Exchanges limited information, only articulate own immediate needs. |
| **Expressing needs** | Expresses desires and refusals inappropriately, cannot select the right situation. |
| **Eye contact** | Stares because of curiosity and seeking attention. |
| **Initiating interaction and conversation** | Does not initiate interaction unless for egocentric reasons. |
| **Physical Contact** | Makes physical contact, usually inappropriate and to see reaction of others. |
| **Using body to communicate** | Does not maneuver body correctly to suit the situation or in relation to others. |
| **Using gestures** | Gestures becoming appropriate. |
| **Using speech to communicate** | Articulates understandable speech but short phrases, not always clear. Inability to modulate speech and volume for the situation. |

### Lifeskills

| | |
|---|---|
| **Assertiveness** | Puts own rights first, is unaware of others' rights and feelings, acts with inappropriate response e.g. either aggression or withdrawal. |
| **Care of medication** | No awareness of need for medication, under constant supervision. |
| **Child Care Skills** | Does not care for children, under constant supervision or care. |
| **Conflict Management** | Inadequate management of conflict situation, reacts inappropriately e.g. with either aggression or withdrawal. Causes conflict repeatedly. |
| **Domestic Skills** | Does not perform these skills, usually under constant supervision or care of others. |
| **Money Management and Budgeting Skills** | Does not handle money or do budgeting, usually under constant supervision or care. |
| **Personal Care, Hygiene, Grooming** | Shows interest in refined skills e.g. grooming, dressing, hair care but inappropriate with poor quality. Dental hygiene poor. |
| **Personal Safety** | Is aware of personal safety but needs occasional reminders and supervision, dependent on others. |
| **Pre-vocational Skills** | Begins to show some skills e.g. performing one or two routine tasks in the ward (making own bed), washing tea cups. |
| **Problem Solving Skills** | Is not able to identify the problem. |
| **Stress Management** | Is unaware of own stressors, acts with aggression or withdrawal. |
| **Use of Transport** | Depending on others for transport and able to request assistance in transportation for own needs. |
| **Vocational Skills** | No vocational skills. |

### Role Performance

| | |
|---|---|
| **Awareness of Roles** | Is aware of role in institution, tries to comply but needs supervision. |
| **Competency** | Is able to perform minor tasks of a role in the institution or ward. Will execute certain tasks of the role to satisfy own needs or gain priviledges. |
| **Role Balance** | Is unaware of role balance. |



**Therapist:** kristyn wolhuter
**Organisation:** Chris Hani Baragwanath Hospital
**Email:** kristyn.wolhuter@gmail.com
**Fax:**
**Tel:** 0117063265

APOM

Activity Participation Outcome Measure

# Occupational Therapy Report

| | | | |
|---|---|---|---|
| **Organisation Name:** | Chris Hani Baragwanath Hospital | **Date Of Assessment:** | 2013/07/05 |
| **Patient Name:** | Participant 1 | **Date Of Admission:** | 2013/02/21 |
| **Patient Age:** | 27 | **Level Of Creative Ability:** | Self Presentation |
| **Patient Gender:** | Male | | |

## Role Performance

| | |
|---|---|
| • **Role Expectations** | Is aware of basic expectations but needs reminding of the expectations. |

## Balanced Lifestyle

| | |
|---|---|
| • **Habits** | Inappropriate and destructive habits may be present e.g. begging, chain smoking, addiction to drugs, undesirable sexual activities. Is unaware of good habits. |
| • **Mix of Occupations** | Beginning to develop preferences e.g. which tasks to do in ward, at home or in OT department. Meaningful occupations are usually self-centred. |
| • **Time Use and Routines** | Is unaware of concept of balanced life style or time use. Person in institution that provides routines that structure time use automatically. |

## Motivation

| | |
|---|---|
| • **Active Involvement** | Puts in effort, willing to try out and present self. Effort usually ends abruptly and before activity is completed. |
| • **Goal Directed Behaviour** | Beginning to work towards a goal with guidance from therapist, participates in task with explorative action. |
| • **Locus of Control** | External locus of control, egocentric and participates for rewards. Needs to experience success to engage in activity again, impulsive actions. |
| • **Motives and Drives** | Egocentric motives, belonging and approval from selected persons drive the person to action. |
| • **Shows Interest** | Shows interest in stimulation and activities, interest not sustained. |

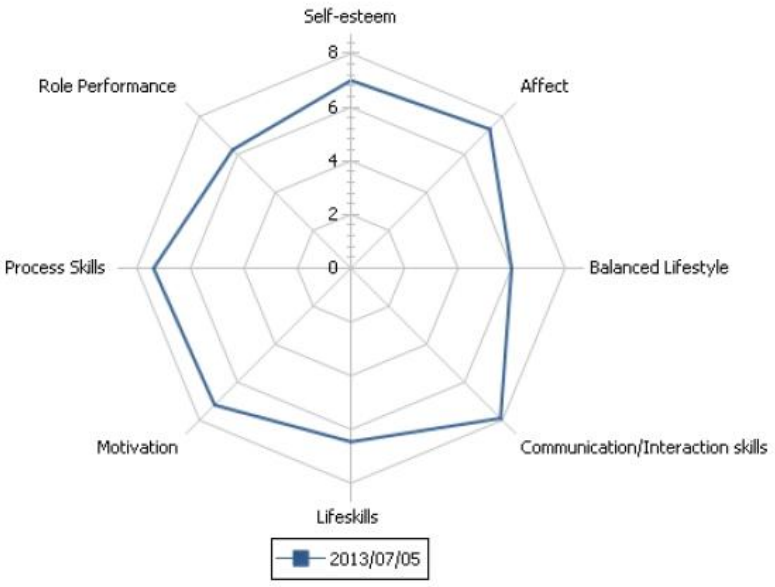
## Self-esteem

| | |
|---|---|
| • **Attitude Towards Self** | Unrealistic positive attitude towards self or feels cheated and victimized by life. |
| • **Awareness of Qualities** | Do not express any qualities or characteristics about self. |
| • **Commitment To Task/Situation** | Willingness to commit to some steps of a task and present self for a short period in a known situation. |
| • **Self Worth** | Sometimes unrealistic self worth, not able to select appropriate criteria to judge self worth against. |
| • **Self-assurance** | Hesitant if therapist or support is absent or unavailable. Sometimes over confident. |
| • **Social Presence** | Is unaware of social contexts. |
| • **Using Feedback** | Is unable to view feedback as means to improve self esteem, sometimes overreacts to minor positive feedback. |

## Affect

| | |
|---|---|
| • **Control** | Little control over emotions. |
| • **Mood** | Fluctuating moods. |
| • **Repertoire of Emotions** | Evidence of basic emotions e.g. satisfied or dissatisfied, enjoyment or anger, distress or apathy. |

## Admission Summary



## Process skills

| Tone (1, 2, 3) | Self differentiation (4, 5, 6) | Self presentation (7, 8, 9) | Passive participation (10, 11, 12) | Imitative participation (13, 14, 15) | Active participatio (16, 17, 18) |
|---|---|---|---|---|---|
| Unaware of the task. | Fleeting attention to the task. | Focuses attention for short periods, easily distracted. | Focuses attention for duration of task performance but quality of attention sometimes poor, sometimes distracted. | Focuses attention for duration of task performance with good quality, not easily distracted. | Able to attend to task comple quality of attention extremely good. |
| Not prepared to engaged in a task. | No talk of pace or rate of work as actions are destructive or incidental. | Inconsistent pace or task execution, slow or poor rate and poor accuracy. | Pace starts to be consistent but still slow, accuracy sometimes poor. | Consistent pace, good rate of work according to the norm, good accuracy. | Consistent pace, good rate o work, sometimes exceeding t norm without risking accurac |
| No attempt to select appropriate tools and materials for the task. | No attempt to select appropriate tools and materials for the task. | Poor selection and impulsive use of appropriate tools and materials for the task. | Selects appropriate and necessary tools and materials for the task if task is familiar and structured. | Selects appropriate and necessary tools and materials for the task, even unfamiliar tasks. | Selects appropriate and necessary tools and material familiar and unfamiliar the tas |
| No evidence of knowledge of materials or tasks. Concepts are disrupted. | Minimal knowledge of materials and tasks. Identifies elementary concepts e.g body, colour and numbers. Knows functions and characteristics of elementary concepts. | Basic knowledge of intrinsic properties of materials. Identifies elementary and combined concepts. | More developed knowledge of materials and tasks. Identifies combined concepts. | Sufficient knowledge of materials and tasks, knows where to find additional information if he does not know. Complex and abstract concepts are more extensive. | Good knowledge, will seek o interesting facts or more advanced information. Compl and abstract concepts are extended and well developed |
| No handling of materials or tools. | Poor or inappropriate handling of material and tools. Poor maneuvering of objects held in the hand. | Appropriate handling but poor maneuvering of tools. Uses tools and materials according to their intended purposes. | Skill starting to improve and handling of tools is improving but yet not according to the norm. Uses tools and materials according to their intended purposes. | Good skills and handling of tools, comply with the norm. Uses tools and materials according to their intended purposes. | Good skills and handling of t is able to learn new skills, too handling is swiftly. Adapts toc materials for better performar |
| No task concept. | No task concept but able to follow an instruction or command. | Beginning to understand the task and could identify with task. Will begin with a task but not able to plan logical order of the task independently. Task concept unconsolidated. | Needs assistance in beginning the task, deciding when to do next step and when task is complete. Better performance with familiar tasks - might be able to complete familiar tasks. Task concept almost consolidated, avoids evaluation of the task. | Able to begin, order steps logically, continue and complete steps without hesitation. Shows satisfaction and evaluate the task. Task concept is consistent and consolidated. | Shows initiative and originalit task execution, able to impro on performance due to critica evaluation of a task. |

| | | | | | |
|---|---|---|---|---|---|
| No ability to organize space and objects for task performance. | Actions in task performance aimless, incidental and sometimes destructive, no ability to organize space and objects. | Willing to explore with materials and tools but no intention to organize the workspace. Area to be structured by therapist. No attempt to restore workspace. | Beginning to organize own work space and objects for familiar tasks, needs assistance with unfamiliar tasks. Will restore if asked to. | Able to organize space and objects, follows/imitates the procedure as set out by others. Restores workspace without reminding. | Able to organize space and objects in own original manne Willing to assist others. Alway restores workspace and remir others to do so. |
| No engagement in tasks and therefore unable to anticipate or correct for errors. | Engagement in tasks incidental or destructive and no ability to anticipate or correct for errors. | Engage in tasks to explore, needs prompting to anticipate or correct for errors but no learning from the consequences of errors. | Anticipated one or two apparent, simple errors and able to correct these errors. Beginning to learn from the consequences of errors. | Anticipated a number of apparent, complicated errors and some complex errors and are able to correct these errors. Learns from the consequences of errors. | Anticipate and correct for erro ensure good quality end prod Learns from errors and will co up with original solutions. |

## Communication/Interaction skills

| Tone (1, 2, 3) | Self differentiation (4, 5, 6) | Self presentation (7, 8, 9) | Passive participation (10, 11, 12) | Imitative participation (13, 14, 15) | Active partcipation (1 17, 18) |
|---|---|---|---|---|---|
| Aware that someone is there, makes no physical contact. | Avoids physical contact or makes inappropriate physical contact. | Makes physical contact, usually inappropriate and to see reaction of others. | Limited physical contact but appropriate. | Makes appropriate physical contact as other do (imitate correct behaviour). | Consistently makes appropria physical contact. |
| Stares into nowhere Might have fleeting eye contact. | Gazes and stares inappropriately, unable to use gaze to communicate. | Stares because of curiosity and seeking attention. | Beginning to use gazes correctly for communication. | Gazes appropriately for communication. | Use gazes consistently and appropriately in communicatio |
| No use of gestures. | Uses none or inappropriate gestures. | Uses gestures excessively or inappropriately. | Gestures becoming appropriate. | Gestures are appropriate. Orientates self correctly in relations to others. | Uses gestures consistently an appropriately. |
| Sometimes aggressive behaviour but does not use body to communicate. | Poor ability to use body to communicate, sometimes aggressive behaviour. | Does not maneuver body correctly to suit the situation or in relation to others. | Orientates oneself physically in correct position in relation to others. | Maneuvers body correctly to suit the situation or in relation to others. | Uses body effectively in communication, not unsure to show actions and maneuvers body well to others in a group. |
| Limited to no use of speech to communicate. | Uses speech to communicate but usually incoherent and not able to modulate tone of voice or volume. | Articulates understandable speech but short phrases, not always clear. Inability to modulate speech and volume for the situation. | Beginning to articulates clear and understandable speech and modulates volume, but not consistent. | Consistently articulates clear and understandable speech and modulates volume. | Good articulation and modulat speech well. |

| | | | | | |
|---|---|---|---|---|---|
| No exchange of information. | Exchanges limited information, only articulate own immediate needs. | Tries to communicate and exchange information but superficially and not always appropriate. | Exchanges information in "safe" and known situations, usually appropriate but limited. | Exchanges a variety of information. | Exchanges relevant and interesting information. |
| Limited expression of desires, refusals seen in aggressive behaviour. | Needs to express desires and refusals immediately and inappropriately. | Expresses desires and refusals inappropriately, cannot select the right situation. | Unsure to express desires and refusals. | Still unsure to express desires and refusals but imitate others if necessary. | Expresses desires and refusal with confidence. |
| Does not initiate interaction. | Does not imitate interaction or sustain a conversation unless to defend self. | Does not initiate interaction unless for egocentric reasons. | Initiates interaction and terminates a conversation correctly. | Engages in interaction according to social norms. Keeps up a conversation and expresses affect towards others. | Seeks out interaction with othe warm and open approach to others. Is able to focus on relevant aspects in conversati |
| No awareness of others and no desire to form a relationship or adhere to social norms. | Fleeting awareness of others and no desire to form a relationship or adhere to social norms. | Awareness of basic social norms emerging but unable to conform to social norms, forms a relationship for egocentric reasons. | Aware of social norms and beginning to conform to explicit social norms. Dependent on others to initiate meaningful relationships. | Give and take emerges in relationships. Complies with social norms like others do. | Forms good relationships with others, seeks to give in relationships. Adapts own behaviour when situation changes. |
| No interest to form rapport with others and unaware of others' needs and requests. | No interest to form rapport with others and unaware of others' needs and requests. | No interest to form rapport with others. Does not respond to the needs of others (might be aware of needs). | Is unable to but wishes for rapport with others, inconsistent giving in a relationship. | Is able to establish rapport with others, respect others' reactions and requests. | Is able to establish rapport consistently, responds to need others with ease. |

## Life Skills

| Tone (1, 2, 3) | Self differentiation (4, 5, 6) | Self presentation (7, 8, 9) | Passive participation (10, 11, 12) | Imitative participation (13, 14, 15) | Active participation (16, 17, 18) |
|---|---|---|---|---|---|
| Cared for by nursing staff or family. | Needs physical assistance and super-vision for bathing, toileting. Eating usually untidy and messy. | More refined skills e.g. grooming, dressing, hair care inappropriate and poor quality. Dental hygiene poor. | Self-care skills appropriate and with good quality, refined self care appropriate and good quality. | Is independent in all personal care skills and performs it with good quality. | Competently in all personal ca skills, uses originality, acts as model for others. |
| No sense of personal safety, in total care and needs constant supervision and assistance. | Needs constant supervision for personal safety and medication. | Is aware of personal safety but needs occasional reminders and supervision, care of medication dependent on nursing staff or family. | Is able to maintain personal safety, takes responsibility for medication but inconsistent. | Is able to maintain personal safety, takes responsibility for medication consistently. | Competent in personal safety, takes responsibility for safety o others. Responsible and consistent use of medication, consults when revision of medication is needed. |

| | | | | | |
|---|---|---|---|---|---|
| Transported by nursing staff or family if needed. | Dependent on others for transport. | Dependent on others for transport. | Is able to organize own transport, utilizes public transport or drive own vehicle. | Organizes own transport, whether public, self driving or lift club. | Organizes own transport and solve problems with transport an original way. |
| No skills evident. | Does not perform these skills, usually under constant supervision or care of others. | Performs aspects of domestic skills e.g. washing dishes, making tea. Quality still lacking. | Greater variety in domestic skills with improved quality but not consistently performing well in these skills. | Performs most domestic skills with sufficient quality and consistently (imitate another role models). | Has a wide repertoire of dom skills and performs them well with originality (acts as role m for others). |
| No skills evident. | Does not care for children, usually under constant supervision or care. | Is unaware of the different duties and responsibilities in child care skills. | Is aware of the obvious child care duties but not consistently performing well in these skills. | Fulfils child care duties and responsibilities consistently (imitate other role models). | Fulfils childcare duties and responsibilities with originality (acts as role model for others |
| No skills evident. | Does not handle money or do budgeting, usually under constant supervision or care. | Is unaware of value of goods or setting priorities for spending money. | Is aware of value of daily goods and needs but is not able to spend money consistently well. | Is aware of value of goods, has the ability to budget and spend accordingly in a consistent way (imitate other role models) | Is aware of value of goods, ha the ability to budget and spen accordingly in an original way (acts as role model for others |
| No skills evident. | Is unaware of own or others' rights and feelings, acts with aggression or withdrawal. | Puts own rights first, is unaware of others' rights and feelings, acts with aggression or withdrawal. | Is aware of own and others' rights and feelings but responds passively, avoids conflict or immobilized by stress. | Responds appropriately to the rights and feelings of others but needs a role model to be assertive. | Responds appropriately to th rights and feelings of others. the example for assertiveness |
| Is unaware of stress. | Is unaware of own stressors, acts with aggression or withdrawal. | Is aware of stressors but cannot identify own. Do not realise effect of stress on life. Is unaware of techniques for stress relieve. | Identifies own stressors with guidance, is aware of techniques for stress, uses techniques with guidance. | Identifies own stressors and manages stressors by following prescribed techniques and methods on own. | Creates own stress managem programme with valuable techniques and methods. Set example for others. |
| Is unaware of conflict. | Handles conflict with aggression or withdrawal, often causes conflict without realising it. | Handles conflict with aggression or withdrawal, causes conflict repeatedly. | Avoids conflict and often immobilized by conflict. Is aware of techniques the handle conflict but only uses it with guidance. | Uses a few techniques for conflict handling independently. | Is able to choose a technique from a variety of techniques. Assists others in conflict management. |
| Is unaware of a problem. | Is not able to identify the problem. | Is able to identify simple problems, no skills to perform other steps of problem solving. | Is aware of the steps of problem solving, identifies simple problems but needs guidance for complex problems. | More complex problem solving skills emerges but follows methods that others would suggest. | Good problem solving skills, repertoire of methods are bei used and Is able to assist oth in problem solving. |
| No skills present. | Begins to show some skills e.g. performing one or two routine tasks in the ward (making own bed), washing tea cups. | Begins to use pre-vocational skills but inappropriately and with poor quality. | Performs pre-vocational skills with some quality but inconsistently. | Performs pre-vocational skills according to the norm. | Performs pre-vocational skills originality. |
| No vocational skills. | No vocational skills. | Vocational skills emerging, may have splinter skills e.g. filing, typing. | Some vocational skills present but needs assistance to perform the skills. | Enough vocational skills to enter open labour market. | Variety of vocational skills, us successful in a job. |

## Motivation

| Tone (1, 2, 3) | Self differentiation (4, 5, 6) | Self presentation (7, 8, 9) | Passive participation (10, 11, 12) | Imitative participation (13, 14, 15) | Active participation (16, 17, 18) |
|---|---|---|---|---|---|
| Makes no effort to engage in activity. | Makes minimal effort, incidental response, shows enjoyment for brief moments. | Puts in effort, willing to try out and present self. Effort usually ends abruptly and before activity is completed. | Musters courage and is able to maintain effort if no problems are encountered. Shows enjoyment during the task. | Sustains consistent effort for a task. Enjoyment motivates him to participate in more challenging tasks. | Sustains consistent effort and generates originality. Enjoymer leads to more creative participation in future situations |
| Basic drive to maintain the body in homeostasis, no signs of will to live, quality of life dependent on nursing care. | Willing to participate if basic drives and needs are satisfied. | Egocentric motives, belonging and approval from selected persons drive the person to action. | Approval and belonging to a group drive the person to action. | Positive self-esteem drives the person to action. | Striving for self actualization ar values drive action. |
| Shows no need for stimulation or participation in activities. | Shows interest in activities that will satisfy basic and immediate needs. | Shows interest in stimulation and activities, interest not sustained. | Shows interest in variety of activities, sustains interest in preferred and known activities. | Shows interest in preferred and non-preferred activities, willing to learn new skills. | Shows interest in preferred anc non-preferred activities, execut with originality, adapts to make non-preferred activities more interesting. |
| No signs of goal directed behaviour. | No signs of goal directed behaviour, participates in tasks with incidental action. | Beginning to work towards a goal with guidance from therapist, participates in task with explorative action. | Works towards a goal in well structured and well known tasks, action is passive and needs support and encouragement from therapist. | Is able to plan goals for a task, imitate others and abide by rules and own structure. | Is able to plan goals, adapt wh problems arises, shows initiativ in task performance. |
| External locus of control, dependent on total nursing care. | External locus of control, Is able to do self care but needs external rewards to participate in other tasks. Not able to see if activity was successful or not, incidental actions. | External locus of control, egocentric and participates for rewards. Needs to experience success to engage in activity again, impulsive actions. | External locus of control, waiting for therapist to structure environment, willing to participate in secure environment. | Internal locus of control emerging, set up a plan of action and beginning to take responsibility for own actions. Could handle negative effects of failure. | Internal locus of control, takes responsibility for own actions, changes behaviour or actions where necessary, failure is see as a challenge to improve in future, believes he can influenc outcomes of events. |

## Role performance

| Tone (1, 2, 3) | Self differentiation (4, 5, 6) | Self presentation (7, 8, 9) | Passive participation (10, 11, 12) | Imitative participation (13, 14, 15) | Active participation (16, 17, 18) |
|---|---|---|---|---|---|
| Is unaware of roles. | Is unaware of roles. | Is aware of role in institution, tries to comply but need supervision. | Is aware of roles in own situation and social standing if structure is secure and familiar. | Is aware of roles in own situation and social standing in stable and changing situations. | Completely aware of roles, ass others to be aware of their role |
| Is unaware of role expectations. | Needs reminding of minor tasks of a role. | Needs reminding of expectations and tasks of a role. Unrealistic expectations. | Is aware of simple expectations that are obvious for a role. | Knows expectations of a role and will refuse additional expectations. | Is aware of all expectations and finer nuances of a role. |
| Is unaware of role balance. | Is unaware of role balance. | No evidence of role balance, performs some tasks of a role under supervision. | Is aware of role balance but needs guidance to perform tasks of different roles at the same time. | Is able to balance roles by following a role model and set routine. | Is able to balance roles and ad routine as expectations increas |
| Is unable to perform any roles. | Is able to perform one or two tasks of a role in the institution or ward under constant supervision. | Is able to perform minor tasks of a role in the institution or ward. Will execute certain tasks of the role to gain priviledges. | Perform some tasks of a role sufficiently. | Performs role as expected and according to the norm. | Competent in a variety of roles the same time. Acts as a role model for others. |

## Balanced life style

| Tone (1, 2, 3) | Self differentiation (4, 5, 6) | Self presentation (7, 8, 9) | Passive participation (10, 11, 12) | Imitative participation (13, 14, 15) | Active participation (16, 17, 18) |
|---|---|---|---|---|---|
| Person requires total care. Is unaware of concept of balanced life style or time use. | Is unaware of concept of balanced life style or time use. Person in institution that provides routines that structure time use automatically. | Is unable to organize own time use, needs a structured pre-planned programme, gets upset if routine changes. | Is aware of the importance of balance in tasks and to have a routines but unable to allocate time use independently. | Is able to organize time use into a routine that will improve own life style but finds it difficult to follow it consistently. | Organises own time use and follows it consistently, adapts ti use when situation changes. |
| Is unaware of undesirable or good habits. | Inappropriate and destructive habits may be present e.g. begging, chain smoking, addiction to drugs, undesirable sexual activities. Is unaware of good habits. | Inappropriate habits still present but beginning to be aware of negative effects of destructive habits. Useful habits emerging e.g. attending OT programme or protected workshop. | Habits not well established and easily disrupted by illness. Finds it difficult to replace undesirable habits with good habits but realizes the importance of it. | Is aware of undesirable habits and able to change to good habits. | Avoids undesirable habits, assi others to change habits. Constantly striving for quality o life and will adapt habits to hav better life style. |
| Needs total care, follows routine of institution. Is unaware of meaning of being occupied. | Preference to do as little as possible, unhealthy mix of occupations. Is unaware of meaning of being occupied. | Beginning to develop preferences e.g. which tasks to do in ward, at home or in OT department. Meaningful occupations are usually self-centred. | Is aware of the value of variety and meaningful occupations but finds it difficult to identify occupational preferences that provide meaning and satisfaction. | Has a set repertoire of preferred and meaningful occupations but no desire to explore more occupations. | Actively involved in a good repertoire of preferred occupations and often pursues new ones. |

## Self esteem

| Tone (1, 2, 3) | Self differentiation (4, 5, 6) | Self presentation (7, 8, 9) | Passive participation (10, 11, 12) | Imitative participation (13, 14, 15) | Active participation (16, 17, 18) |
|---|---|---|---|---|---|
| Withdrawn, no awareness of situation or little reaction to a situation. | Reluctant to commit self to a task or situation. | Willingness to commit to some steps of a task and present self for a short period in a known situation. | Willingness to try out an entire task in a secure environment and known situation. | Confident to participate if norms are clear. | Assertive and confident in most situations. |
| Is unaware of feedback. | Little reaction to feedback, sometimes responds aggressively towards feedback. | Is unable to view feedback as means to improve self esteem, sometimes overreacts to minor positive feedback. | Is unable to handle the negative aspects of evaluation or feedback from others. | Is able to handle negative aspects of feedback. | Expresses opinions, judge negative feedback correctly. |
| Is unaware of self worth. | Is unaware of self worth. | Sometimes unrealistic self worth, not able to select appropriate criteria to judge self worth against. | Self-handicapping behaviour sometimes evident, protects the self from failure and therefore no risk taking (anxiety for failure). | Anxiety for failure present when situations are risky. | Behaves and acts quickly and with confidence. |
| Withdrawn and secluded. | Unpredictable changes in attitude and behaviour. ("I can't"-attitude) | Hesitant if therapist or support is absent or unavailable. Sometimes over confident. | Hesitant in unfamiliar situations and withdraws when frustrated. | Generally self- assured in all situations. | Cheerful and happy. Sought ou for advice and reassurance. |
| No evidence of an attitude towards self. | Do not express an attitude towards self. | Unrealistic positive attitude towards self or feels cheated and victimized by life. | Doubt own adequacy, self-defeating. Subtly negativistic. | Beginning to be confident to stand up for self. Usually a positive attitude towards self. | Satisfied with self and no signs self-concern. |
| Is unaware of any qualities or characteristics about self. | Do not express any qualities or characteristics about self. | Self-pitying, timid, could express concrete characteristics about self. | Self-conscious and sometimes self-depreciative, pre-occupied with incompetencies, unsure if conformed to norms. | Imitate successful persons, is able to name good and bad qualities. | Is able to acknowledge poor qualities, usually attempts to improve on it. |
| Is unaware of social contexts. | Is unaware of social contexts. | Dependent on social acceptance and attention. | Passive in social situations, not confident to participate. | Not isolated from others, confident to be part of a group. | Socially at ease, social poise a presence. |

## Affect

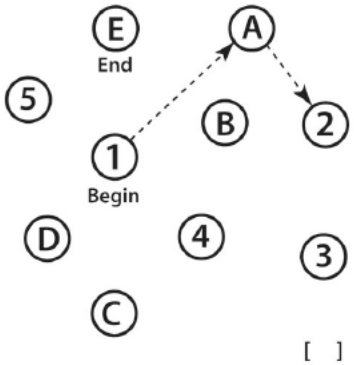
| Tone (1, 2, 3) | Self differentiation (4, 5, 6) | Self presentation (7, 8, 9) | Passive participation (10, 11, 12) | Imitative participation (13, 14, 15) | Active participation (16, 17, 18) |
|---|---|---|---|---|---|
| Blunted, flat affect. | Evidence of basic emotions e.g. satisfied or dissatisfied, enjoyment or anger, distress or apathy. | Shows a greater variety of emotions e.g. fear, affection, envy but lacks appropriate level of intensity. | Anxious in unknown situations. Refined emotions like regret, pride, frustration, surprise. | Evidence of empathy, compassion and warmth. Anxious when creativity is required, needs an example to perform. | Whole spectrum of emotions e. compassion, tenderness, loyalt Anxiety usually inspires achievement. |
| No control over emotions, sometimes screaming. | Little control over emotions. | Easily triggered, sudden outburst of emotions like anger or laughter, lacks control. | Easily immobilized by anxiety, controls emotions in secure situations. Externalization of emotions becomes socially acceptable. | Is able to control emotions, immobilized by anxiety in new situations without a model to imitate. | Is able to control emotions and negative effects of anxiety and not easily immobilized. |
| Apathetic and lethargic. | Unpredictable moods. | Fluctuating moods. | Mood is stable in secure situations but tend to be pessimistic in unfamiliar situations. | Mood is consistent and tends to be optimistic. | Mood is consistent and optimis |

# *Appendix B*

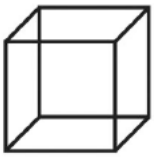
**MONTREAL COGNITIVE ASSESSMENT (MOCA)**
Version 7.1 Original Version

NAME :
Education : Date of birth :
Sex : DATE :

**VISUOSPATIAL / EXECUTIVE** — POINTS




Copy cube



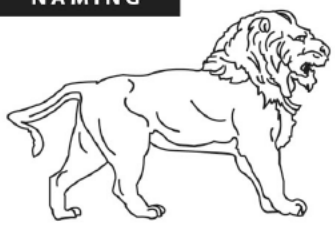
[ ] [ ]

Draw CLOCK (Ten past eleven)
( 3 points )

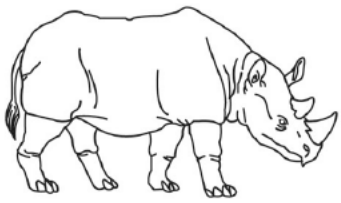
[ ] Contour [ ] Numbers [ ] Hands

__/5

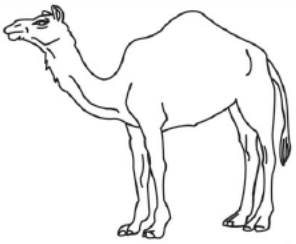
**NAMING**



[ ]



[ ]



[ ]

__/3

**MEMORY** Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.

| | FACE | VELVET | CHURCH | DAISY | RED |
|---|---|---|---|---|---|
| 1st trial | | | | | |
| 2nd trial | | | | | |

No points

**ATTENTION** Read list of digits (1 digit/ sec.).
Subject has to repeat them in the forward order [ ] 2 1 8 5 4
Subject has to repeat them in the backward order [ ] 7 4 2

__/2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors
[ ] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B

__/1

Serial 7 subtraction starting at 100 [ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65
4 or 5 correct subtractions: **3 pts**, 2 or 3 correct: **2 pts**, 1 correct: **1 pt**, 0 correct: **0 pt**

__/3

**LANGUAGE** Repeat : I only know that John is the one to help today. [ ]
The cat always hid under the couch when dogs were in the room. [ ]

__/2

Fluency / Name maximum number of words in one minute that begin with the letter F [ ] _____ (N ≥ 11 words)

__/1

**ABSTRACTION** Similarity between e.g. banana - orange = fruit [ ] train – bicycle [ ] watch - ruler

__/2

**DELAYED RECALL**

| | Has to recall words WITH NO CUE | FACE [ ] | VELVET [ ] | CHURCH [ ] | DAISY [ ] | RED [ ] | Points for UNCUED recall only |
|---|---|---|---|---|---|---|---|
| **Optional** | Category cue | | | | | | |
| | Multiple choice cue | | | | | | |

__/5

**ORIENTATION** [ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City

__/6

© Z.Nasreddine MD www.mocatest.org Normal ≥ 26 / 30

TOTAL __/30
Add 1 point if ≤ 12 yr edu

Administered by: _____

# *Appendix C*

**OT Research**

**Title: The impact of adolescence initiated alcohol and cannabis abuse/dependence on the level of activity participation in adult males suffering from a psychotic disorder.**

**Inclusion Criteria**

For all participants

- Gender: Male
- Current age: 19 – 29 years
- Dx: Psychotic Disorder (1* or 2* to SA)

**3 Sample groups**: Cannabis abuse, alcohol abuse, no substance abuse

Cannabis/Alcohol:

- Initiated substances between 12 – 18 years
- Meet criteria for DSM –IV Abuse/Dependence before age of 29 years
- Only meet criteria for either alcohol or cannabis (Not both and no other substances)

No substance abuse:

- May use substances but must not meet criteria for abuse or dependence

**Exclusion Criteria**

- Time of Ax: May not be actively psychotic or under influence of substances
- No medical diagnosis which may severely affect function (i.e. HIV, CVA, TBI)
- No other psychiatric diagnosis (i.e. BMD, PD, MR)

Kristyn Wolhuter

082 487 2361

Kristyn.wolhuter@gmail.com

**Referral Form: OT Research**

Client Name:_____

Contact Details:_____

Gender (Male): _____

Current age (19 – 29 yrs): _____

Diagnosis (Psychotic Disorder): _____

Type of Substance (Alcohol, Cannabis, None): _____

(If none selected then the following questions are not applicable)

Age initiated substances (12-18yrs): _____

Level of substance use (Abuse, Dependence): _____

Mental Status Examination:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Other:

_____

_____

_____

_____

_____

Doctors Signature:_____

Date: _____

## *Appendix D*

**Classification of Group**

(To be completed by researcher)

Participant number:

Date of Assessment:

---

Current Age:

| |
|---|
| |

Psychotic psychiatric diagnosis:

| | | | | | |
|---|---|---|---|---|---|
| Schizophrenia | | Substance Induced Psychosis | | Other Psychotic Disorder | |

Type of substance:

| | | | | | |
|---|---|---|---|---|---|
| Cannabis | | Alcohol | | None | |

(If none selected than following on questions are not applicable)

Age initiated substances:

| |
|---|
| |

Level of use of substance:

| | | | |
|---|---|---|---|
| Abuse | | Dependence | |

Additional: Specify type of substance & quantity of use

_____

**Participant Demographic Information**

(To be completed by the researcher)

Contact Details:

_____

Residential Address:

_____

Home Environment/Support systems: (Positive or Negative)

_____

Developmental History: (Any problems noted during childhood?)

_____

Highest Level of Education:

_____

School Performance: (Any problems noted during school years?)

_____

Employment History & Current employment Status:

_____

Socioeconomic Status: (H0, H1, H2, Private)

_____

Family History of Substance Abuse: (Yes/No)

_____

Number of Previous Hospitalizations/Rehabilitation admittance:

_____

Type & Compliance on Psychotropic Medication: (Yes/No)

_____

Other:

# *Appendix E*

**Informed Consent**

**Study Title**: The impact of adolescence initiated alcohol and cannabis use on the level of activity participation in adult males suffering from a psychotic disorder.

**Investigator**: This information details the research being undertaken by Kristyn Wolhuter who is interested in determining the impact of adolescence substance abuse on the level of adult activity participation for an MSc degree in Occupational Therapy.

**Institution**: University of the Witwatersrand

**Researcher's Contact Details**:

011 933 9054 (Work hours) / 082 487 2361 (After hours)

**Researcher's email Address**: kristyn.wolhuter@gmail.com

**Participant Information sheet**

Good Day,

My name is Kristyn Wolhuter and I am both a full time occupational therapist at Chris Hani Baragwanath Academic Hospital as well as a part time MSc OT student at the University of the Witwatersrand. I wish to invite you to consider participating in a research study, entitled "The impact of adolescence initiated alcohol and cannabis use on the level of activity participation in adult males suffering from a psychotic disorder."

There is currently very little research into how certain substances (cannabis and alcohol) affects various areas of people's lives such as work, leisure, hygiene and social skills and how these substances affect individuals already suffering from a mental illness. The purpose of this study is to develop a better understanding of the negative impact of substance abuse in individuals suffering from a mental disorder within the South African context. I hope that through these findings the occupational therapy treatment programmes may become more effective and more specific to people suffering from both a substance abuse problem and a mental illness.

In order to gain an understanding of the long term consequences of the substance abuse or mental illness, an occupational therapy assessment will be done. Each participant shall be placed into one of three groups, one of which will consist of people who misuse alcohol, a group of cannabis abusers and a group of individuals who do not abuse substances. These three groups will then be compared to determine the similarities and differences. This will be done by starting off with a five minute interview to gain some information about you and your health. This will be followed by a series of short activities which will require your active participation. Some examples of these activities include: making a paper box, beading a bracelet, threading a toiletry bag, etc. Each activity will be chosen depending on your experience in that activity and your current level of ability or skill. Whilst you are completing the activity, the researcher will note how you perform the task and input the information onto a computer based system

called the Activity Participation Outcome Measure. This programme will generate a score of the performance which will be analysed with other participant's scores to determine what the similarities and differences are between the three groups.

The whole assessment will take approximately 3 hours to complete but the assessment does not need to be completed in one day and may be carried over to 2 or 3 more sessions if necessary.

There are no known risks, discomforts or side effects from participating in the study.

Your participation in this study is entirely voluntary and you may decline to participate or stop at any time, without stating a reason. Declining to participate will not result in any penalties or loss of benefits. Should you not wish to participate and an occupational therapy assessment was requested by another health professional, a full assessment will still be conducted but the information from the assessment would not be used for research purposes or included in this study.

All information obtained during the course of the study, including hospital records, personal information and research data will be kept strictly confidential. The confidentiality will be maintained by using a code instead of your name so that you cannot be identified. All written research data (paper based) will be securely stored in a locked cabinet accessible only to the researcher. The recorded computer based information will be password protected and known only to the researcher.

If you have any questions or need more information please don't hesitate to contact, Kristyn Wolhuter, at (011) 933 9054 or 082 487 2361. Please contact me telephonically if you wish to receive feedback about the study and the research findings.

If you are happy to participate in my study, please read and sign the attached consent form.

Thank you, Kristyn Wolhuter

**Consent Form**

I agree to participate in the study, “The impact of adolescence initiated alcohol and cannabis abuse/dependence on the level of activity participation in adult males suffering from a psychotic disorder” outlined in the information sheet.

**Participant**

Name:

_____

Signature:

_____

Date:

_____

# *Appendix F*

**UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG**
Division of the Deputy Registrar (Research)

**HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)**
R14/49 Ms Kristyn Wolhuter

**CLEARANCE CERTIFICATE** **M120501**

**PROJECT** The Impact of Adolescence Initiated Alcohol and Cannabis Abuse/Dependence on the Level of Activity Participation in Adult Males Suffering from a Psychotic Disorder

**INVESTIGATORS** Ms Kristyn Wolhuter.

**DEPARTMENT** Department of Occupational Therapy

**DATE CONSIDERED** 13/08/2012

**DECISION OF THE COMMITTEE*** Approved unconditionally

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

**DATE** **CHAIRPERSON** .....
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable
cc: Supervisor : Dr Daleen Casteleijn

---

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

*PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES...*

# *Appendix G*

**Research Committee: Chris Hani Baragwanath Academic Hospital**

25/01/2012

**Re**: Permission to conduct research

To whom it may concern,

My name is Kristyn Wolhuter and I am both a full time occupational therapist at Chris Hani Baragwanath Academic Hospital as well as a part time MSc OT student at the University of the Witwatersrand. I am requesting to conduct my research study, entitled "The impact of adolescence initiated alcohol and cannabis use on the level of activity participation in adult males suffering from a psychotic disorder" at Chris Hani Baragwanath Academic Hospital.

The purpose of this study is to develop a better understanding of the long term consequences of substance abuse in individuals suffering from a psychotic disorder. This will be achieved through comparing the level of functioning between individuals suffering from a psychotic disorder and those that suffer from a psychotic disorder but also abuse cannabis or alcohol. I hope that through these findings the occupational therapy treatment programmes may become more evidence based and specific to people suffering from both a substance abuse problem and a psychotic disorder.

In order to determine a holistic view of the long term consequences of the substance abuse or psychotic disorder, an occupational therapy assessment will be done. A brief five minute initial interview will be done in order to gain basic demographic and medical information. This will be followed by a series of short activities such as making a paper box, beading a bracelet, threading a toiletry bag, etc. Whilst each participant is completing the activity, the researcher will note how they perform the task and put in their level of performance onto a computer based system called the Activity Participation Outcome Measure (APOM). This

programme will generate a score of the performance which will be analysed with other participant's scores to determine if there is any significant difference as well as performance similarities and differences. The participant's scores shall be compared in terms of three groups including alcohol abuse/dependence, cannabis abuse/dependence or no substance abuse/dependence.

Informed consent and confidentiality will be ensured with every participant. The results from the study will be submitted in a research report which will be handed in to the University of the Witwatersrand for the completion of the MSc OT degree.

Ethical clearance (to be completed once ethical clearance from Wits University has been received)

If you have any questions or need more information please don't hesitate to contact me at:

(011) 933 9054 or 082 487 2361.

Yours Sincerely,

Kristyn Wolhuter

Operational Occupational Therapist

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

MEDICAL ADVISORY COMMITTEE

CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL

**PERMISSION TO CONDUCT RESEARCH**

Date: 23rd January 2013

**TITLE OF PROJECT: The Impact of Adolescence Initiated Alcohol and Cannabis Abuse/ Dependence on the Level of Activity Participation in Adult Males Suffering from a Psychotic Disorder**

**UNIVERSITY: Witwatersrand**

**Principal Investigator: Ms Kristyn Wolhuter**

**Department: Occupational Therapy**

**Supervisor : Dr D Casteleijn**

**Permission Head Department** (where research conducted): **Yes**

The Medical Advisory Committee recommends that the said research be conducted at Chris Hani Baragwanath Academic Hospital. The CEO / management of Chris Hani Baragwanath Academic Hospital is accordingly informed and the study is subject to:-

- Permission having been granted by the Committee for Research on Human Subjects of the University of the Witwatersrand.
- The Hospital will not incur extra costs as a result of the research being conducted on its patients within the hospital
- The MAC will be informed of any serious adverse events as soon as they occur
- Permission is granted for the duration of the Ethics Committee Approval.

.....
Recommended
(On behalf of the MAC)
Date: 23/01/2013

.....
Approved/Not Approved
Hospital Management
Date: 25/01/13