MENTAL ILLNESS AND SUBSTANCE USE AMONG MILITARY PERSONNEL IN BOTSWANA DEFENCE FORCE

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DECLARATION

I, hereby declare that this thesis dissertation is of my own original work carried out in the fulfillment of the requirement for the award of the degree of Master of Science in Clinical Psychology at University of Nairobi. I also declare that this thesis **dissertation** has not been submitted for the award of any other degree or to any other university of research and evaluation.

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SUPERVISOR'S APPROVAL

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DEDICATION

This study is dedicated to all military personnel of Botswana Defence Force who have retired on medical grounds due to mental illness that were either caused by or aggravated by military duties. The study is also dedicated to active duty members of Botswana Defence Force who are currently experiencing mental health problems resulting from military duties.

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ABBREVIATIONS AND ACRONYMS

BDF: Botswana Defence Force

DoD: Department of Defence

SANDF: South Africa National Defence Force

OEF: Operation Enduring Freedom

IED's: Improvised Explosive Devices

ASSIST: Alcohol, Smoking and Substance Involvement Screening Test

MINI: Mini International Neuropsychiatric Interview

PTSD: Posttraumatic stress disorder

MDD: Major depressive disorder

GAD: Generalized anxiety disorder

AWL: Absent Without Leave

DEFINITIONS OF TERMS

Mental illness: A psychological condition that causes mild to severe disturbances in an individual's thinking and behavior, which may impair their ability to cope with daily routines.

Substance use disorder: The use of drugs or other substances that affect the individual's normal functioning, impairing their ability to perform daily routines.

Active military personnel: A serving uniformed member of the Defence Force, performing the basic duties of a soldier.

Commissioned Officer: Active military personnel, with a minimum qualification of degree, who are commissioned by the Commander in Chief, the president of Botswana.

Non-Commissioned Officer: Active military personnel, who are recruited after completing high school (form 5), with a minimum of 24 points BGCSE, and are not commissioned by the commander in chief, the president of Botswana.

Military related stress: Emotional suffering experienced when performing military duties, including deployment and other military operations.

Military deployment: Moving military personnel and materials (including weapons) from a military camp to serve in a specified destination for a specific duration.

Posttraumatic stress disorder: A psychological condition caused by experiencing or witnessing a terrifying or life threatening event, resulting in flashbacks, nightmares, anxiety, and uncontrollable thoughts regarding the event. DSM 5 requires that the disturbance should be more than one month after the traumatic event.

ABSTRACT

Introduction: Different studies have reported high prevalence of substance use and mental illness among military personnel compared civilian personnel. This study was assessing common mental illness and substance use among military personnel and also identifying any socio-demographic determinants of substance use and mental illness in this population.

Objective: To determine the prevalence of substance use and mental illness and among military personnel in Botswana Defence Force.

Methodology: This study was a cross sectional descriptive study among military personnel in Botswana Defence Force using multi-stage sampling method. Data was collected using; socio demographic questionnaire, WHO ASSIST and MINI 6.

Results: The results revealed high prevalence of substance use (42.11%) and mental illness (10.79%) among military personnel in Botswana Defence Force. The results also revealed statistically significant association between mental illness and substance use (χ^2=31.126, p-value=0.0025) Among the socio-demographic correlates, the results revealed a statistically significant association between military rank and substance use (χ^2=36.065, p-value=0.002), military rank and mental illness (χ^2=18.065, p-value=0.0127), marital status and substance use (χ^2=13.673, p-value=0.013), marital status and mental illness (χ^2=9.367, p-value=0.025), exposure to trauma and substance (χ^2=33.802, p-value≤0.001), and also exposure to trauma and mental illness (χ^2=15.126, p-value=0.050).

Conclusion: There is high prevalence of mental illness and substance use among military personnel in BDF, which may negatively affects the overall fitness of service members and the military at large.

CHAPTER ONE: INTRODUCTION

Mental health has been a major concern affecting military service members throughout the world. According to (Kaezeem and Abdulkarim (2014) there is high rate of mental illnesses among military personnel. A study conducted by Picket, Rothman, Crawford, Brancu, Fairbank and Kudler (2015) revealed that an estimate of 10% of Operation Enduring Freedom (OEF) active-duty members in North Carolina met a diagnosable mental health condition. The statistics from December 2014 revealed that, among 1.16 million veterans who were registered for Veteran Affairs Health Care in United States, 57.2 percent of them met the diagnostic criteria for at least one mental illness, and post-traumatic stress disorder (PTSD), depressive disorders and anxiety disorders, being the most highly reported mental illnesses, (Picket et al, 2015).

The studies on mental health among active duty members have only focused on those who were involved in specific operations such as combat exposure and peace keeping operations, ignoring the general duties of soldier. There are several duties of active duty members that put them at a higher risk of developing some form of mental illness. To fill up this epidemiological data gap, this study was designed to assess mental health problems among active uniformed personnel serving Botswana Defence Force.

The primary objective of the defence force is to protect the country, its people and the resources. The most important elements towards military success is protecting the health of active duty members, and that consists of preventing and managing physical and psychological injuries resulting from military operation in order to preserve the fighting force, (Russel & Figley, 2017). According to Russel and Figley (2017), it is very important to have military hospitals that can take care of, and treat mental health conditions in a way that will help military personnel very well, hence protecting the fighting force and the government.

Botswana Defence Force, which has a total of 15691 active duty members, is largely affected by the issue of substance use and mental illness among active duty members like other armed forces across the world. This has a negative effect on the overall mission on the overall mission of the BDF, which is to protect the country and its people including resources. Information from unpublished source in Botswana Defence Force revealed that there are many cases of disciplinary action for alcohol related behavior including negligence of duty, absenteeism without leave (AWL), and some of the cases result in expulsion from the BDF. Also there are some cases of mental health illness that were caused by or aggravated by heavy drinking and substance use, which negatively affects the overall productivity of military personnel.

1.1 Background of the study

Alcohol consumption can results in serious psychological problems such as depression, anxiety, and psychoses, (Bray et al., 2010). Long term effects of heavy alcohol drinking can result in tolerance and also adaptation in the body system, and stopping consumption can cause withdrawal symptoms which include; insomnia, hyperactivity of the autonomic nervous system, and also bring anxiety feelings, (Saddock, Kaplan, & Saddock, 2015).

Despite the negative consequences associated with alcohol consumption, many people especially in the army are heavily involved in drinking because of the short term positive effects associated with drinking. According to Varcarolis (2013), drinking alcohol diminishes tension, elevates the feeling of power and lessen the consequences of psychological pain. Many people also report that alcohol reduces the feelings of anxiety, and help them manage the stresses of their daily living. These rewarding effects of drinking have high contribution in people deciding

to drink again after their first experience with alcohol, despite knowing problems associated with alcohol consumption, (Leskin, 2015).

Cannabis has been also reported to be the other highly used drug among active duty members. When smoked, the positive mood effects appear within minutes, peak roughly after thirty minutes, and can be present for about four hours (Saddock, Kaplan, & Saddock, 2015). Motor and cognitive function impairments can last for maximum twelve hours. Numerous use of cannabis can results in tolerance as well as psychological dependence. Individuals may also experience withdrawal symptoms characterized by mood problems, increases in irritability, restlessness, and insomnia, (APA, 2013). The use of cannabis has been shown to be linked to amotivation syndrome, or general lack of motivation to perform daily activities.

According to Leskin (2015), tobacco is also one of the most highly used, deadly, and costly substance in the general population. It has been also reported to be one of the most commonly used substance in the military. Tobacco is one of the most ignored, particularly within the mental health settings, simply because it does not result in behavioral problems compared to other substances, (Leskin, 2015). According to Stein et al. (2017), the main adverse effects of smoking cigarette is death, as it is one of the leading causes of premature deaths in the United States. It has also been reported that thirty percent of cancer deaths in US are caused by tobacco smoke, (Bray et al., 2010).

Substance dependence in the military can have a serious negative effects among military personnel, as well as the defence force at large. Substance use have a negative impacts on the lives and well-being of the soldiers and this affects their physical and psychological fitness to perform military duties and their readiness for the deployment. According to DSM 5, some characteristics of alcohol use disorder include; spending large amount of time in activities related

to obtaining alcohol, alcohol use, or recovering from its effects. Other characteristics include craving or strong desire to use alcohol and also repeated alcohol use which may results in failure to perform major duties at work. These are some of the negative behavioral problems experienced by military personnel with substance use problems. Such people are constantly called for disciplinary hearing because of their failure to perform military duties. Their constant cravings, and preoccupation with alcohol may lead to poor planning, and staying on the given tasks, as their minds are only thinking of alcohol and how to get it.

Tobacco and cannabis also have some serious negative effects on the lives of the soldiers. Smoking cannabis may have some effects on cognitive and motor functions, which may last for five to twelve hours. Therefore if soldiers are on cannabis use, it means half of the day they will be experiencing cognitive and motor impairments, and therefore their ability to perform military duties will be affected. Military personnel operate high complex and dangerous machines such as weapons, therefore if they operate these machines under the influence of substance use, they put their lives and others at risks, and lot of casualties will be encountered.

There is also a high prevalence of additional mental illness among people who are treated for alcohol, cocaine and opioid dependence. According to Saddock, Kaplan, and Saddock (2015), up to fifty percent of people with addiction problems have a comorbid psychiatric condition. Depression and suicide are cited as the most common psychological problems among people who meet the diagnostic criteria for substance abuse or substance dependence. According to Stein et al. (2017), people with substance use disorder are about twenty percent more likely to die by committing suicide compared with general population. Other psychological problems that have been linked to substance use disorders include; antisocial personality disorder, mood disorders, and anxiety disorders.

1.2 Problem statement

Mental health illnesses have a serious negative consequences among military personnel and it also affects military operations. However, a large number of active duty members who have some mental illnesses do not seek help because of the stigma related to mental health, particularly in the military service, (Sharp, Fear, Rona, Jones, & Goodwin, 2014). Many studies have explained that some barriers that soldiers may face in seeking help may include; stigma, practical care, negative attitude or lack of information about mental health and treatment, and believing that they do not need treatment.

The psychological distress does not only affect military personnel or military operations, as most of these active duty members carry the psychological burden to their homes and families. According to Kazeem and Abdulkarim (2014), military families face unique stressors related to deployment as they are constantly concerned regarding the safety of the duty members, adapting to diverse situations in the military and increased family duties in their absence. Upon returning from military operations, they take some time dealing with and managing physical and psychological wounds, and therefore the task of fitting in to family life, relinking to social support, and examining the roles they play in the society can be stressing.

In Botswana Defence Force, a large number of military personnel have lost their jobs due to mental illnesses that are either caused by, or aggravated by military duties. People with serious mental health conditions are not allowed to handle weapons, which is the core feature of military duties. This is mainly because they are not stable psychologically, therefore they may be at risks of harming themselves or others. Soldiers who are unable to work with weapons reduces the strength of their respective departments, or defence force at large, as they cannot perform the

core duties of the defence force. In most cases, they are discharged from the military on medical grounds, and this brings financial burden to themselves and their families.

1.3 Research questions

- What is the prevalence of substance use among military personnel in Botswana Defence Force?
- What is the prevalence of mental illness among military personnel in Botswana Defence Force?
- Is there any significant association between mental illnesses and substance use among military personnel in Botswana Defence Force?
- Are there any socio-demographic correlates of substance use and mental illness among military personnel in Botswana Defence Force?

1.4 Research objectives

1.4.1 Broad Objective

The purpose of this study was to identify common mental illness and substance use among the military personnel in Botswana Defence Force.

1.4.2 Specific Objectives

- To examine the prevalence/frequency of common mental disorders among military personnel in Botswana Defence Force
- To examine the prevalence of substance use among military personnel with mental illnesses in Botswana Defence Force.
- To assess the relationship between mental illnesses and substance use among military personnel in Botswana Defence Force.

- To assess the socio-demographic correlates of substance abuse and mental illness among military personnel in Botswana Defence Force.

1.5 Research scope

The study was carried out among military personnel in Botswana Defence Force. The sample was be collected from military personnel of all ranks.

1.6 Assumptions

- There is high prevalence of mental illnesses and substance use among military personnel compared to the general population.
- The high rates of substance use negatively affects 'fitness for duty' of military personnel and also affects military operations.
- High substance use contributes to mental illnesses such as addiction disorders and other mental illnesses related to substance use.

1.7 Significance of the study

The current study has contributed to previous studies conducted on mental health and substance use in the military by specifically focusing on common mental illnesses and substance use in the military. Previous studies which were mainly carried on western countries such as US, UK, Australia, and Canada mainly focused on specific populations within the military, especially military combatants and veterans who went for first world war, second world wars and recent peace keeping military operations in Afghanistan and Iraq. Few studies done among military personnel in Africa have either looked at substance use only or specific mental illness in the military, most common being depression and post-traumatic stress disorder (PTSD).

The study is very important as it identified common mental disorders in the military and also finding out if substance abuse is more common among military personnel with particular

mental illnesses. The study also created awareness to the senior management in the military on how substance use is a serious concern to the military, and how substance use cause harm to military personnel including addiction disorders, and mental health illness that are either caused by or aggravated by substance use. The study is of paramount importance to military personnel in Botswana Defence Force because, by understanding common mental illnesses in the military, some strategies will be implemented to reduce the risks of developing such mental health problems, ensuring that soldiers remain mentally fit for military duties and other military operations. Therefore, this study is very important to the military as it aims towards improving mental health among military personnel in Botswana Defence Force.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Substance abuse and mental illness has been a serious concern among active duty members and veterans. Military duties and lifestyles are some of the contributing factors to increased mental illnesses and substance use among active duty members. The current study explored common mental illnesses and substance use among active duty members in Botswana Defence Force. This chapter explains the theoretical explanations of mental illness and substance use among military personnel, previous studies on mental illnesses and substance use among military personnel, and also how different variables interact and influence mental health and substance use problems among military personnel.

2.2 Substance use in the military

The military personnel undergo through a certain type of training to ensure high quality performance in their duties. However, certain lifestyle behavior choices have the capacity to affect their functional ability, (Bray et al, 2010). Such behavioral choices may include substance use and excessive drinking, which may have negative impact on the overall fitness of the military personnel.

Different researchers have explained that military personnel have a higher rate of excessive drinking and substance use compared to civilian personnel. Substance use, especially alcohol, tobacco, and cannabis use, have been reported as the highly negative effects of military life, (Kazeem & Abdulkarim, 2014). Some studies have found that people who are under treatment for alcohol, cocaine, or opioid use have high occurrence of additional psychiatric problems. According to Saddock, Kaplan, and Saddock (2015), up to fifty percent of individuals addicted to substance use have a comorbid mental health disorder. According to Stein et al.

(2017), most common psychiatric disorders that commonly occur with substance use include, depression and suicide, anxiety disorders, and adjustment disorders.

Military personnel go through a lot of physical and psychological pain when performing their daily duties, and other military operations, therefore their high involvement in substance use compared to the civilian personnel may be an attempt to deal with their physical and psychological pain as explained by psychodynamic theories. Prolonged deployment has been linked with high chances of developing a psychiatric disorder, and this may account for high rates of psychiatric problems among military personnel, (Pickett, Rothman, Crawford, Brancu, Fairbank, & Kudler, 2015)

Substance misuse have a serious negative consequences among military personnel including their health and well-being, and it also affects productivity in the workplace. A study conducted in United States defence force identified an association between the amount of drinking and high casualties including accidents and injuries, as well as relational, legal, and other problems in the workplace related to substance misuse, (Russel, Schaubel, & Figley, 2018). According to Picket et al. (2015), the rates of substance dependence, binge drinking and harmful use of alcohol is relatively higher in the military personnel compared to the general population.

Several studies have discussed the impact substance use among active military personnel across the world. A study conducted on roughly 43 000 active military personnel in North Carolina showed that almost half (44%) were at risk of alcohol use, but only 4% of these military personnel were referred for treatment, (Pickett et al., 2015). A recent survey by Stein, Sills, Gelernter, Heeringa, Nock, Sampson, and Kessler (2017) conducted among active military force in the U S military revealed that 20% of active military personnel were classified as heavy drinkers.

According to Witkiewitz and Estrada (2011), about 70% of military personnel in U S who have been previously deployed reported alcohol consumption in the past 30 days, drinking an average of 3.31 drinks per day, and 2.9 days of binge drinking in the past 30 days. Another survey by the Department of Defense (DoD) showed an increase in binge drinking (from 35 to 47%) and heavy drinking (from 15 to 20%) from 1998 to 2008, and the highest statistics were recorded among those with combat exposure, (Stein et al, 2017). A study conducted by Golub, Vazan, Bennett, and Liberty (2013) revealed that alcohol binge drinking (drinking 5 or more drinks on a single occasion), heavy drinking, marijuana, and powder cocaine were identified as the most highly used substances among U S active military personnel and veterans. Across all the different age groups in the military, the relative frequency of dangerous drinking among military males is almost twice as much as males in the general population, and for military females, it is three times more, (Pickett et al., 2015).

Other than its impacts on an individual's health and overall functioning alcohol and substance misuse is a burden to the military as an organization as different studies have observed a relationship between the level of drinking and productivity in the workplace, (Stein et al., 2017). A study conducted by Kazeem and Abdulkarim (2014) among Nigerian military personnel revealed that, among 22400 military personnel used in the study, 18.5% were involved in substance abuse of at least one substance (alcohol, tobacco, or cannabis), and 8.5% of the respondents were involved in substance abuse of at least two of the above mentioned substances

In 2009, a total of 11892 U S armed force active military personnel were enrolled for alcohol education course, which is a program designed for soldiers who were disciplined for alcohol related misbehavior, (APA, 2017). Another study conducted among Nigerian military personnel on substance abuse revealed that, out of the 22400 military personnel used in the

study, 18.5% of the participants were involved in substance abuse of at least one substance (alcohol, tobacco, or cannabis), and 8.5% were involved in substance abuse of at least two of the above mentioned substances (Kazeem & Abdulkarim, 2014).

Substance use, especially alcohol, tobacco, and cannabis is also very common among military personnel of Botswana Defence Force. These use of these substances have negative impacts in the overall productivity of the BDF, as it interferes with the military operation and the fitness of military personnel. Military personnel operate complex weapons therefore the use of substances that affect human cognition and behavior may result in a carelessness while operating these machines which may results in injuries and deaths.

2.3 Mental health in the military

Military personnel encounter several stressors during their military duties that affect their mental well-being. Such stressors include; combat exposure, witnessing human suffering, difficult working environments, prolonged separation from home and family members, and conflicts with other military personnel including supervisors, (APA, 2017). Several studies have reported high rates of mental health illnesses among military personnel compared to non-military personnel. According to Golub et al. (2013), more than two million Americans have been deployed in Iraq and Afghanistan over the past ten years and there is an alarming increase in the statistics for active military personnel returning with mental and behavioral health complications.

According to Robertson (2016), military life exposes soldiers to different stressors and potential traumas, and these put military personnel at an increased risk of mental health problems such as major depressive disorders (MDD), generalized anxiety disorders (GAD), and posttraumatic stress disorders (PTSD). The statistics done in December 2014 by Department of Defense (DoD), revealed that 57.2% of the 1.16 million veterans that were registered with the

Department of Veteran Affairs Healthcare were identified with at least one mental health diagnosis, and the most prominent psychological problems identified were posttraumatic stress disorder, depressive disorders, and other anxiety disorders excluding PTSD, (Pickett et al., 2015).

Among soldiers returning from military duties in Afghanistan and/or Iraq, it has been estimated that roughly 30% of them had a mental health problems; out of which 7% were diagnosed with depression, 7.5% with anxiety disorders, and 12% with PTSD, (Al-Almri & Al-Almri, 2017). The prevalence of PTSD in the general population has been estimated to be around 3.5% which is roughly one quarter of that found among soldiers returning from military operations. The above statistics summarizes the burden of military operations on mental health, therefore mental health professionals in armed forces have a very important role to play to ensure that military personnel remain fit for military operation and their general well-being.

Several studies have also indicated that military personnel who have been previously deployed, especially in combat roles, are at higher risks for mental health problems than military personnel who have not been deployed. According to Pickett et al. (2015), the risk of alcohol misuse among military personnel previously deployed to Iraq is two times more compared to those who have not been deployed.

Different studies in Africa have also reported high statistics of mental illness among military personnel and veterans, especially among those who helped during peace keeping operations in Uganda, Sierra Leone, Rwanda, Nigeria, and other peace keeping operations in Africa. A study conducted by Okulate and Jones (2006) revealed that the prevalence of PTSD among Nigerian Army peace keepers deployed between 1999 and 2006 peace keeping operation in Sierra Leone was 22%. Another study conducted by Van Dyk (2016) revealed that the

prevalence of PTSD among military personnel of South African National Defence Force (SANDF) who were deployed in recent peace keeping operations in Rwanda which started in 2004 was 26%.

The burden of psychological problems associated with military duties does not only affect military personnel or armed forces as organizations, as family members of these serving members are also affected. According to APA (2017), one third of children who have at-lest one parent who have been deployed experience psychological challenges including depression, anxiety, and other behavioral problems. Kazeem and Abdulkarim (2014) also reported that military families face unique stressors related to deployment as they are constantly worried about the safety of the service member, adapting to diverse military circumstances and high family responsibilities in the absence of duty members.

2.3.1 Posttraumatic stress disorder in the military

PTSD has been the most widely studied mental health condition among active military personnel and veterans across the world. According to Liu, Li, Zhao, Guan, Tang, Cui, Song & Liu, (2016), the high rates of PTSD among military personnel is associated with wide range of factors which include combat specialization, frequency and duration of deployment, and also trauma severity during the deployment. Another study by Pickett et al. (2015) revealed that PTSD was highly linked with staying for a long time in the deployment area, current and lifetime alcohol use, as well as the use of cannabis. A study conducted by Okulate and Jones (2006) investigating PTSD, survivor guilt, and substance use among hospitalized Nigerian veterans revealed that the prevalence of PTSD was 22% and for survivor guilt was found among 38% of the respondents. Another study conducted by Connell, Omole, Subramaney, and Olorunju,

(2013) revealed that the prevalence of PTSD among veterans who served in the South African boarder war was 33% and was also highly linked to combat exposure.

Military personnel with combat exposure are 2.59 times more likely to develop PTSD than military personnel without combat exposure (Picket et al., 2015). Combat exposure in the military include wide range of activities which may include: engaging in direct combat or indirect combat operations, responding to attacks involving the use of Improvised Explosive Devices (IED's) such as mortars, and also providing medical response for war casualties. The prevalence of PTSD is mostly high among individuals with physical injuries resulting from the battle. The most common PTSD co-occurring disorders among active duty members are; substance use disorders (75%), generalized anxiety disorder (44%), and major depression, (Okulate & Jones, 2006).

2.3.2 Depression and Suicide

Depression has been identified to be one of the highly reported mental illnesses among military personnel in different parts of the world. Depression is mainly characterized by low mood, loss of interest in pleasurable activities, feelings of worthlessness, disturbed sleep or appetite, and poor attention and concentration. A study conducted by Al-Almri and Al-Almri (2013) in Taif region revealed that the prevalence of depression among active service members is 17.1% and is linked to several factors such smoking and poor working relation with co-workers and supervisors. Another study conducted by Kazeem and Abdulkarim (2014), revealed that the prevalence of depression among military personnel in Nigeria was 12.6%.

Depression plays a vital role in suicidal behavior and it has been shown to be the most likely cause of suicidal behavior. Studies have shown that about 80% of patients with suicidal ideation have depression, and the rate of suicide among patients with depression is estimated to

be 22 to 36 times higher compared to individuals without depression, (Al-Almri & Al-Almri, 2013). Suicide in the military has been explained to be the results of multiple stressors in the workplace. For example, a soldier can have a conflict with a supervisor, and at the same time having a pending case of being absent without leave (AWL) due to substance misuse which put him at risk of losing his job. Suicide behavior has been reported to be higher among alcoholics compared to those not abusing alcohol. A study conducted by Pickett et al. (2015) among 40 000 Norway military personnel showed that the risk of suicide among alcohol abusers was 6.9% higher compared to those who were not alcohol abusers.

Statistics from South African National Defence Force (SANDF) showed that there were 2040 cases of suicide and attempted suicide between 1990 and 2001, and 433 cases were completed suicide, (Van Dyk, 2016). The Statistics further explain that for the year 1999 alone, an average of 4 active duty members lost their lives due to suicide on monthly basis. Suicide behavior has been reported as the burden of military life that does not only affect active military personnel. According to Connell et al. (2013), suicide behavior does not only affect active duty members, as several studies have highlighted that combat veterans also struggle with mental health problems including suicide.

2.4 Relationship between mental illness and substance use in the military

Studies on mental illness and substance use have offered different opinions on whether mental illness in the military causes substance use or it's the other way round. A study by Witkiewitz and Estrada (2011) revealed that 70% of U S military personnel who have been previously deployed have reported drinking in the past 30 days. Another study by Okulate and Jones (2006) revealed that substance use is the most common PTSD co-occurring disorder, as their study found that 75% of Nigerian military personnel diagnosed with PTSD have substance

use disorder. These studies suggest that soldiers exposed to stressful situations are more likely to be involved in substance use as a maladaptive coping mechanism to emotional suffering.

Soldiers are exposed to different stressors in the workplace which may predispose them to substance use as their coping strategy to deal with psychological pain. The use of substance as a coping strategy to stressful situations is a poor coping mechanism, and it is likely to create more problems. It is not only trauma exposure or PTSD that is associated with substance use, as other studies have linked depression and anxiety disorders among military personnel to substance use.

Despite several studies explaining that mental illness acts as a predictor to substance use, other studies have highlighted that substance use, may predispose military personnel to mental illness. Stein et al. (2017) highlighted some psychiatric disorders such as posttraumatic stress disorder, mood disorders, and suicidal ideation are likely to occur with alcohol use disorders, and conversely these mental health problems are also associated with the onset of substance use disorders. Therefore it is still not very clear on whether military personnel with mental illness are more likely to have substance use problems, or it is substance use that is a predisposing factor to mental illness.

2.5 Mental health illnesses comorbid with substance use among military personnel

Several studies have explained a link between mental illnesses and substance use, especially in the armed forces, where the two variables are highly reported. According to Kaplan, Saddock, and Kaplan (2015), inhalants substances cause a serious organ damage and can cause a serious impairment in the brain, as studies have shown that 47.3% schizophrenia patients in US have some form of substance abuse. According to APA (2017), 77.7% of active military

personnel hospitalized for treatment of PTSD had a co-occurring psychiatric diagnosis, with alcohol abuse or dependence being reported as the most frequent comorbidity (27.8%).

A study on the link between depression and substance use in the armed forces revealed that military personnel may use "over the counter" drugs when depressed, and these drugs are likely to increase depressive symptoms by resulting in changes in the neurophysiological or behavioral aspects of the user, as 9-47.9% of active duty members have been reported to have co-occurring depression and drug use, (Almri & Almri, 2013). Another study conducted by Kazeem and Abdulkarim (2014) revealed that Nigerian military personnel's way of illicit drug use have resulted in high comorbidity of mental illnesses and substance dependence problems among Nigerian military personnel. In Botswana Defence Force, a high number of active duty members are engaged in substance use, and this put them at risk of addiction disorders and other mental health illnesses resulting from substance misuse. The purpose of this study is to explore substance use and mental illnesses among military personnel in BDF, and to examine if there is any existing relationship between the two variables.

2.6 Socio-demographic correlates of substance abuse and mental illness in the military.

Several studies have linked educational attainment as the protective factor against developing mental illness. According to Zimmerman & Woolf (2014), achieving positive health results in the healthcare system is affected by different factors that are affected by educational attainment. Adults with higher educational attainment are less likely to be involved in risky behaviors such as heavy drinking and smoking, and they are also likely to engage themselves in healthy behaviors such as sports and exercise.

Different studies have also highlighted that military personnel of lower ranks to be at higher risk of developing mental illness compared to higher ranks. According to a study by

Harbertson, Grillo, Zimulinda, Murego, Cronan, and May (2013) conducted among Rwanda military personnel, soldiers of lower ranks are more likely to have depressive symptoms because of their work related stress and lower pay. However it is difficult to single out lower rank as the cause of depression among these military personnel, as most of these soldiers with lower ranks in Botswana Defence Force are hired upon completing their secondary education, therefore they also have low educational attainment compared to officers who are hired with a minimum qualification of degree.

Support system within the individual's immediate environment has also been highlighted as a protective factor for developing mental illness among military personnel, (Morgan, Hourani, & Tueller, (2017). According to APA (2017), military families play a very important role in helping to prepare military personnel for deployment, offering emotional support and motivation, and helping with restoration of normal functioning after returning home. Military personnel who are married are therefore more likely to cope well with adverse effects of military life, as their families help them to adjust emotionally after returning from deployment.

2.7 Barriers to mental health treatment

Despite the alarming statistics for mental health and substance use in the military, several studies have indicated that majority of military personnel do not seek help for such conditions, because of the labeling and stigma associated with mental health. A study conducted by Nedegaard and Zwilling (2017) revealed that an estimate of 60% of military personnel who experience mental health problems do not seek help. Another study by Al-Almri and Al-Almri (2013) revealed that only 19% of active duty members with serious mental health condition seek help, therefore there is a serious concern for untreated psychological condition among military personnel. A study conducted among roughly 43 000 active military personnel also revealed that

nearly half (44%) were at risk of alcohol abuse, yet only 1% to 4% of them were referred for substance use treatment, (Witkiewitz & Estrada, 2011).

Several psychological factors play a key role in why military personnel do not seek psychological help. Some of these factors may be specifically be related to the military; military training for example requires mental toughness and endurance or 'soldering on'- pushing through the difficulties and continue working despite the challenges rather than showing weakness or asking for help form other members, (Dickstein, Vogt, Handa, and Litz, 2010). Other barriers to seeking treatment include stigma and discrimination; that is the perception that the perception of supervisors and co-workers will have about their seeking of help, or unit members no longer trusting them and not allowing them to handle weapons. According to Nedegaard and Zwilling (2017), military personnel may agree that civilian providers are competent professionally, but they lack in-depth understanding of soldiers' experiences, challenges and language, and this is one of the main reason why they discontinue with community-based treatment after a single visit.

In Botswana Defence Force, majority of military personnel do not seek help because of the stigma associated with mental health particularly in the armed forces. Public stigma; that is how civilians, co-workers, and supervisors view mental health status of soldiers is one of the main reasons why soldiers do not seek for help. In Botswana, soldiers who have mental health problems, are sent for Medical Board by their unit commanders/heads of department to assess their fitness for duty, and also to get a report and opinion from the health professionals on whether the mental health condition will get better or worse with time, and finally whether the soldier should be discharged on medical grounds, as they cannot perform the core duties of the military including handling firearms. Due to fear of the outcomes of the Medical Board, military

personnel do not disclose their mental health concerns as they only predict one outcome, which is being discharged from the military on medical grounds.

2.8 Theoretical Framework

The ecological systems theory, developed by Urie Bronfenbrenner was used to explain and understand how different systems of relationships within an individual's environment contribute a significant role in how individuals develop. According to Bronfenbrenner, "The ecology of human development is the scientific study of the progressive, mutual accommodation throughout the life course between an active, growing human being and the changing properties of the immediate settings in which the developing person lives," (Johnson, 2008) pp 2. According to ecological systems theory, the individual's environment is made of four layers of systems which work together in different ways, and these layers either influences or they are influenced by an individual's development. These layers include; microsystem, mesosystem, exosystem, and macrosystem. The fifth dimension which consists the element of time was later added to this theory. In the military, different environments such as families, military camps, deployments and many other environments can interact and influence the lives of soldiers in different ways.

Microsystem

The micro-system consists of the immediate surroundings of an individual such as family, peers, and others. Upon joining the military, active duty members detach from their immediate surrounding such as family to live in the military camps, therefore they leave their primary psycho social support behind. In most cases, this often lead to loneliness and isolation, and these factors predispose military personnel to use substance as a coping mechanism. The use of alcohol and other substance in response to emotional distress is a poor coping mechanism.

This isolation from family members also causes emotional reactions which may lead to substance use and mental disorders. In a situation where one is exposed to a traumatic event, these emotional reactions become severe, resulting in trauma and trauma related disorders. If an individual has developed trauma related disorders, they are likely to abuse substance as coping mechanism.

Mesosystem

Consists of the interaction between different microsystems of the individual which affects the way they develop, (Kamenopoulou, 2016). The mesosystem includes bi-directional impacts between the various structures of the microsystem. In the military these may include how different factors such as family and peer support can work together to help individuals at difficult times of their military career, which lessen the chances of developing mental health problems and substance use as a maladaptive coping strategy.

Exosystem

Involves the connection between the environment that does not directly affect the individual and their immediate surroundings. It consists of larger social system, and this may include; events, emergencies, decisions, and policies in which the developing individual has no power, (Johnson, 2008). This system can either have a direct or indirect influence in the developing individual. For example, if the country is unstable or have been recently attacked by terrorists, this is likely to have a direct influence in the duties of military personnel, as they are more likely to experience prolonged deployment to ensure safety of the country. Different studies have showed prolonged deployment to be a predisposing factor to mental health illnesses and substance use, therefore these will also increase the chances of developing mental illnesses and use substance use as a poor coping mechanism.

Macro system

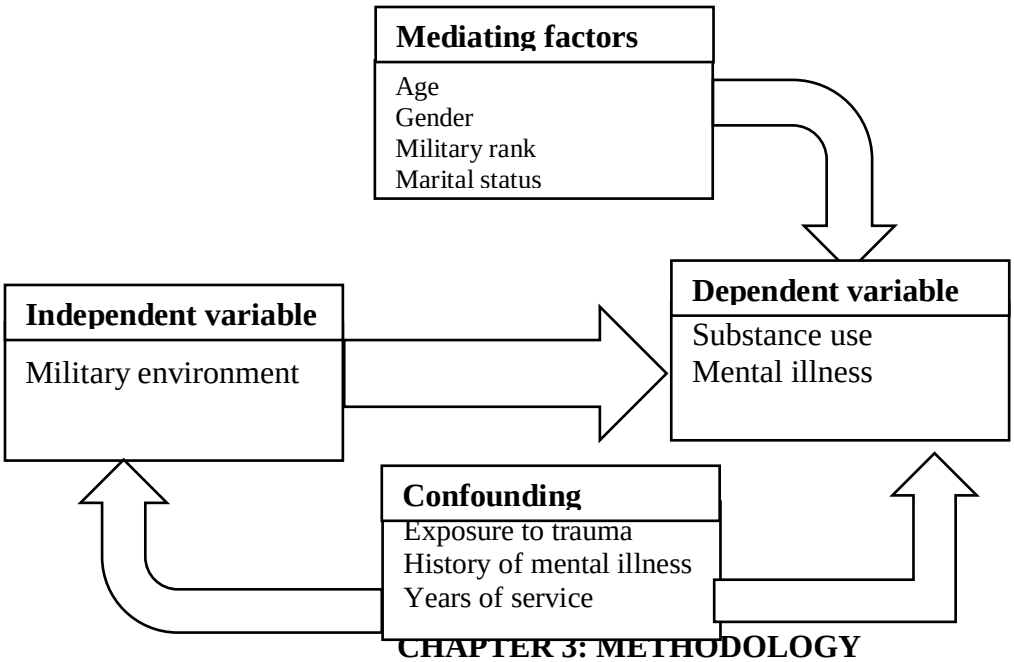
The macro-system mainly consists of the cultural and society beliefs, lifestyles, opportunities, customs, and resources that have great influence on the individual's development Kamenopoulou, 2016). According to Johnson (2008), this system is mainly considered to have a unidirectional influence not only on the individual, but also on the other ecological systems. As the members of the army detach from their families to join the army, they are likely to forget their previously held cultural and societal beliefs and copy military culture. This is more likely to create conflict especially when new cultural beliefs are in contrast with the previously held beliefs, leading to emotional distress.

Chronosystem

Represents a time based dimension that have a major influence on the operations of all layers of the ecological systems, (Kamenopoulou, 2016). According to Johnson (2008), the chronosystem can be inclusive of both the short term and long term aspects of an individual throughout their lifespan, and also the socio-historical time magnitudes of the individual's macrosystem in which they live. For military personnel, these may include: years of service in the military, number of deployments and duration of each deployment.

2.9 Conceptual framework

Flow chart 1: The interaction of study variables.



CHAPTER 3: METHODOLOGY

3.1 Study design

This study was a cross-sectional descriptive study, assessing mental illness and substance use among active duty members in Botswana Defence Force. This cross sectional descriptive study used quantitative data from the population under study during a specific point in time. The study design helped the researcher to compare different variables or population groups at the same time.

3.2 Study site

The study was conducted in Botswana, the Southern part of Africa. Specifically, the study was carried out in Botswana Defence Force, in two military camps. These camps were randomly selected from eight military camps which are; Sir Seretse Khama Barracks (SSKB), Glen Valley military barracks, Village Military Barracks, Thebephatshwa Air Base, Rakhuna Military Barracks, Eastern Military Garrison (EMG), Donga Military Garrison, and 2 Brigade

Group Military Barracks. Botswana Defence Force was established in 1977, and since its inception it has been well known for performing its core military duties to the expected level, including peace keeping operations, anti-poaching operations, and other core duties of the military.

3.3 Study population and Target population

The BDF has a total of 15691 active military personnel, spread across different military camps. These include commissioned officers and non-commissioned officers. For the commissioned officers, the highest rank Lieutenant General (Commander, BDF), and the lowest rank is second Lieutenant. Among the non-commissioned officers, highest rank is Warrant Officer Class 1, and the lowest rank is Private. The total active force in the BDF is mainly responsible for protecting the country and its people.

There are several stressors that military personnel in the BDF encounter when performing the military duties, and these have a significant influence on the level of substance use, and mental health illnesses among active duty members. A very small proportion of soldiers seek help for psychological problems that were either caused by or aggravated by military duties, including substance use and addiction disorders. The few soldiers who seek treatment mostly visit the Chaplain's office, SSKB hospital, or other health facilities outside the military barracks. The target population in this study was all active duty members of BDF.

3.4 Sample size determination

The sample size for the study was drawn from the military personnel in BDF using the Cochran's sample size calculation formula.

$$N = \frac{z^2 p(1-p)}{d^2}$$

Where,

N is the sample size

z is the standard normal distribution set at 1.96 which corresponds to 95% confidence level.

p is proportion in the population who have some characteristics being investigated, which is the prevalence of substance use among active duty members at 53.3% (0.533), (Kazeem & Abdulkarim, 2014)

d is degree of accuracy desired on the error margin set at 0.05.

The sample size was therefore be calculated as:

$$N = \frac{1.96^2 \times 0.533(1 - 0.533)}{(0.05)^2}$$

ss = 382 active duty members.

Screening for substance use was carried out on 382 active duty members.

3.5 Sampling frame

The study was carried out in military camps of Botswana Defence Force. Multi-stage sampling was used to select the participants. Multi-stage sampling is a multifaceted type of cluster sampling consisting of two or more phases in sample selection, (Chauvet & Ensai, 2015). It involves choosing sample in phases using smaller sampling units in each phase. One or more cluster is selected randomly, and everyone in the selected cluster is sampled.

Two of the eight military camps in Botswana Defence Force were randomly selected for the study. Participants from the selected camps were stratified in to ranks, to ensure that all ranks are equally represented in the study. Systematic sampling method was then used to select participants from each rank, selecting every n^{th} participant.

3.6 Inclusion criteria

- All active duty members of Botswana Defence Force.

3.7 Exclusion criteria

- Newly recruits (trainees), and new soldiers who have just completed their military training.
- Military personnel who are working closely with members of the BDF, but are from outside the country, such as those at Staff College and those who are on other military duties, representing their respective countries.
- Retired members who are currently serving in the BDF, under civilian personnel.

3.8 Variables of the study (data sets)

The independent variable of the present study is military personnel. The dependent variables are substance use and mental illness. Substance use (dependent variable) was measured using the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) and for mental health problems (dependent variable), MINI 6 will be used. The socio-demographic variables, which include age, gender, military rank, and marital status are the mediators in the variable interaction. The confounding variables that were likely to have an impact on the outcome variables will included; exposure to trauma, history of mental illness, and years of service. These confounding variables were measured and held statistically constant to ensure that the do not affect the relationship between the independent variable (military personnel) and the dependent variables (mental illness, alcohol and substance use)

3.9 Data collection instruments

3.9.1. Socio demographic questionnaire

This was developed by the researcher to capture age, gender, marital status, years of active service, rank, history of mental illness, and trauma exposure.

3.9.2 Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)

The ASSIST was used to screen for substance use among active duty members in BDF. The assist was developed for World Health Organization (WHO) by an international group of substance abuse researchers to identify psychoactive substance use the related common adverse effects in primary care patients (Newcombe, Stowers, McDermott, Stephen, & Nosa, 2016). The ASSIST screen for use of psychoactive substances which include; tobacco products, alcohol beverages, marijuana, cocaine, amphetamines, inhalants, sedative or sleeping pills, hallucinogens, heroin/morphine or pain medication, and others. Test-retest reliability for the instrument revealed high reliability of the instrument as the reliability coefficients ranged from 0.90 to 0.58. Qualitative data collected after retest also revealed that the questions were very clear to the participants and they were in line with participants' expectations for a health interview.

The researcher adapted the ASSIST screening test by picking only substances that are reported to be commonly used among active duty members and veterans. Screening was conducted for alcohol, tobacco, and marijuana use as they are reported to be the most commonly use substances in the military across the literature. For respondents with moderate substance use, a brief intervention was provided, educating them that their continued use, or increased use of their mentioned substance will have some negative consequence on their physical health and mental well-being, therefore they should find ways of reducing or stopping substance use. For those with severe substance use, they were referred to military hospital in SSKB to start treatment and further management. All the respondents were asked to answer both the ASSIST and the MINI 6.

3.9.3 Mini International Neuropsychiatric Interview 6th edition

The MINI 6 will be used to explore the common mental disorders among military personnel in Botswana Defence Force. The Mini International Neuropsychiatric Interview (MINI) is a brief but accurate structured diagnostic interview that is commonly used tool that assess seventeen common disorders using DSM-IV-TR diagnostic criteria, (Pinninti, Madison, Musser, & Rissmiller, 2015).

The participants responded either by Yes or No to assess disorders that include; major depressive disorders, suicidality, manic episode and hypomanic episode, panic disorder, agoraphobia, social phobia, obsessive compulsive disorder, posttraumatic stress disorder, alcohol dependence and alcohol abuse, substance dependence and substance abuse (non-alcoholic), psychotic disorders, mood disorders with psychotic features, anorexia nervosa, bulimia nervosa, generalized anxiety disorders, antisocial personality disorder. According to Pettersson, Modin, Wahlstrom, Hammarberg, and Krakau (2018), criterion validity for MINI assessment tool has been reported to be high or acceptable, and inter-rater reliability has been reported to be high for all the disorders.

3.9.4 Scores and interpretations

The results obtained using the ASSIST and MINI 6 were analyzed using descriptive statistics. For the ASSISST the scores were divided into mild, moderate, and severe substance use. For tobacco and marijuana, scores from 0-3 indicated low substance use, 4-26 moderate substance use, and 27 and above indicated severe substance use. For alcohol beverages, scores of 0-10 indicated low alcohol consumption, 11-26 moderate alcohol consumption, and 27 and above indicated severe alcohol consumption.

For MINI 6 participants responded yes or no to the questions asked. The scoring was based on the DSM-IV-TR diagnostic criteria of mental illnesses. The MINI 6 scoring is binary, that is, either respondent meet the diagnostic criteria for the mental illness or does not. The results were analyzed in tables to observe number of respondents who meet diagnostic criteria for each mental illness.

3.10 Data collection procedure

Participation in this study was completely voluntary and no active duty member was forced to take part in this study. Also, if some participants gave consent to take part in the study and they did not want to continue the interview, they were not forced to continue and no penalty measures were taken against them. For those who were interested in taking part in the study, the objectives of the study were well explained to them and all the procedures including their role in the study. They were given informed consent (appendix A) which was written in English as it is the language used in the BDF to communicate instructions and it is well understood by all military personnel.

3.10.1 Validity and reliability of the research findings

Pilot study was conducted using thirty military personnel before the actual data collection was done to assess the effectiveness of sampling frame and techniques to be used, and also to identify any practical problems that may be encountered during data collection. To ensure high validity and reliability of the research findings, participants were interviewed in their naturalistic setting or their place of work, during normal working hours. Participants were be interviewed by the member of the Botswana Defence Force (the researcher) who understand the language, military culture and their environment, to improve reliability and validity of research findings. According to Kimberlin and Winterstein (2008), participating in an interview conducted by

someone familiar to the participants may also reduce anxiety which may influence reliability of the findings.

3.11 Data management, storage and protection

All the research materials used for the research including demographic information, consent forms, and information obtained using the research instrument are kept safe and confidential. Information stored on soft copies is stored in a computer with a password, to ensure that it is not accessible to anyone.

3.12 Data analysis

The Statistical Package for Social Science (SPSS) 23 was used to analyze the prevalence of substance use and mental health illnesses among military personal in BDF. The researcher started by running the data through SPSS to test whether the data was normally distributed (test for normality). For the first objective which was prevalence of substance use among active duty members in the BDF, the researcher used measures of central tendency and dispersion to analyze data. A p value of < 0.05 will be used as statistically significant.

For the second objective, which was the prevalence of mental illness among military personnel in the BDF, the researcher also used measures of central tendency and dispersion to analyze data obtained using the MINI 6 to obtain common mental illnesses among active duty members. The third objective which was focusing on the association between substance use and mental illnesses, chi square was used to assess if there was a significant association between substance use and common mental illnesses among military personnel in BDF. Chi-square was also used for the final objective which was assessing socio-demographic correlates of substance use and mental illness among military personnel in Botswana Defence Force.

3.13 Ethical considerations

The research proposal was submitted to Ethical Review Board in Kenya and Botswana for ethical clearance on human participation in the study. Permission to conduct the study was obtained from the Commander Botswana Defence Force (appendix C). The study objectives were well explained to the Commander, and the procedure for data collection were also explained. Participants who were distressed by their participation in the study were referred to a clinical psychologist in the military or referred to seek help from other local hospitals.

3.13.1 Confidentiality

For confidentiality purposes, the participants were assured that the information will be kept confidential and be used only for academic/research purposes. Participants were also assured that their actual names will not be used in the study, as the study's main focus was on obtaining the overall idea of substance use and mental health illnesses in the BDF as an organization, not at individual level.

3.13.2 Risks

Since the data collection instruments were mainly focusing on the life experiences of the participants, some of the questions explored painful experiences of the participants, triggering suppressed emotions and this led to distress. To deal with the distress caused by participating in the study, clinical psychologists in the military and chaplains were well informed of the study, as they work closely with the psychological problems of active duty members and they were able to help members who were distressed by the interview.

3.14 Dissemination of the results

The findings of this study were be presented to University of Nairobi, School of Medicine, Department of Psychiatry. The results will also be presented to the Commander BDF

and senior management, and also the mental health department to give the overall idea of substance use and mental health illnesses among military personnel in the BDF. The results may also be revealed to other organizations, schools and healthcare centers that may have interest in the findings of the study, but through the approval of the Commander BDF.

CHAPTER FOUR: RESULTS

4.1. Introduction

The findings for this study are presented in pie charts, tables and bar charts. Chi-square was used to assess association between substance use and common mental illnesses, and also to assess the socio-demographic correlates of mental illness and substance use. Results were analyzed objective by objective.

4.2 Socio-demographic information

Majority of the respondents were of male gender (78.7%), with female gender being (21.3%).

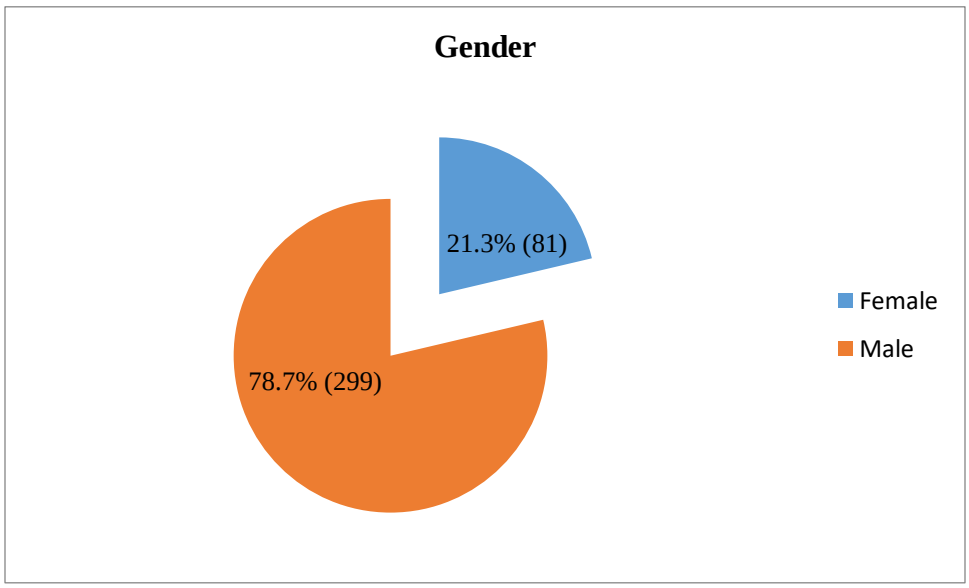


Figure 1: Gender of respondents

About two thirds of the respondents (64.2%) reported that the have never been married. One third of the respondents reported that they are married. The lowest percentage are recorded from those who are divorced and widowed, (1.1% and 0.8% respectively).

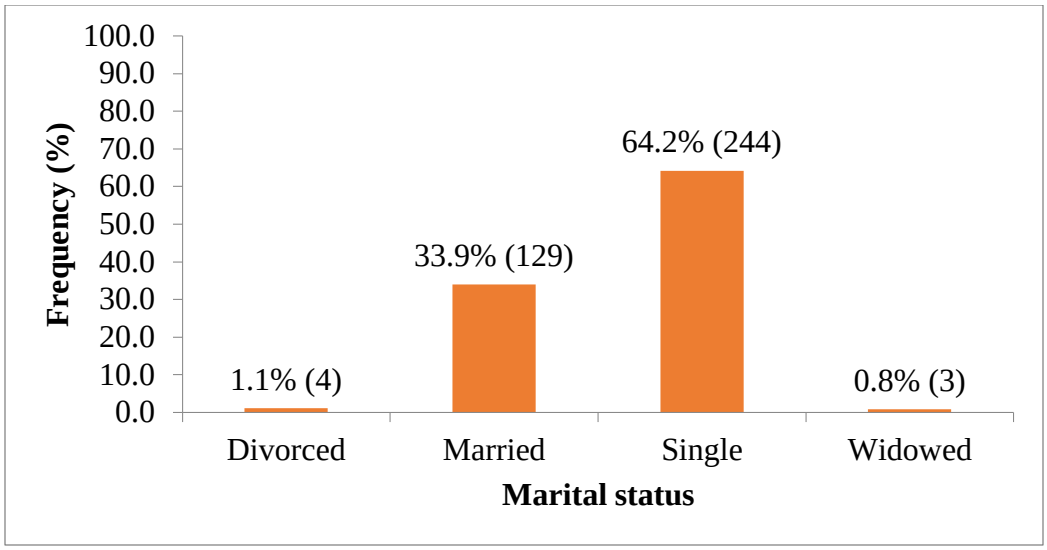


Figure 2: Marital status

One third of the respondents (33.7%) had been in service between 1 to 5 years followed by those who have been between 6 to 10 years (26.3%).

Table 1: Years of service

Years of service	Frequency	Percentage
1 year to 5 years	128	33.7
6 years to 10 years	100	26.3
11 years to 15 years	61	16.1
16 years to 20 years	39	10.3
21 years to 25 years	37	9.7
Above 25 years	15	3.9
Total	**380**	**100.0**

There were more non-commissioned officers (59.2%) than commissioned officers (40.8%).

Table 2: Category of responsibility

Category	Frequency	Percentage
Commissioned Officers	155	40.8
Non Officers	225	59.2
Total	**380**	**100.0**

Majority of the respondents were: private personnel (23.2%), lieutenants (14.5%), and lance corporals (12.6%).

Table 3: Rank of respondents

Rank	Frequency	Percentage
Private	88	23.2
Lance Corporal	48	12.6
Corporal	36	9.5
Sergeant	20	5.3
Staff Sergeant	19	5.0
Warrant Officer II	11	2.9
Warrant Officer I	3	.8
Second Lieutenant	21	5.5
Lieutenant	55	14.5
Captain	36	9.5
Major	24	6.3
Lieutenant Colonel	13	3.4
Colonel	6	1.6
Total	**380**	**100.0**

About two thirds of the respondents (62.9%) stated that they have never been exposed to a life threatening (traumatic) event in the military.

Table 4: Exposure to a life threatening (traumatic) event in the military

Trauma	Frequency	Percentage
No	239	62.9
Yes	141	37.1
Total	**380**	**100.0**

4.3. Prevalence common mental illnesses

Out of the 380 respondents that took part in the study, only 41(10.8%) met the diagnostic criteria for a mental disorder. For those who met the diagnostic criteria, the most frequent was alcohol dependence (3.9%), followed by Major Depressive Disorder (3.2%).

Table 5: Prevalence of common mental illness

Mental illness	Occurrence [N (%)]		N
	No	Yes	
Major Depressive Disorder	368(96.8%)	12(3.2%)	380
Agoraphobia	378(99.5%)	2(0.5%)	380
Post-Traumatic Stress Disorder	377(99.2%)	3(0.8%)	380
Alcohol Dependence	365(96.1%)	15(3.9%)	380
Substance Dependence	375(98.7%)	5(1.3%)	380
Generalized Anxiety Disorder	376(98.9%)	4(1.1%)	380
Total	**339(89.2%)**	**41(10.8%)**	**380**

Out of the 41 respondents who met the diagnostic criteria for mental disorders, 36.6% (15) met the criteria for substance dependence, 29.3% (12) met the criteria for MDD, 12.2% (5) met the diagnostic criteria for substance dependence, 9.8% (4) GAD, 7.3% (3) PTSD, and 4.9% agoraphobia.

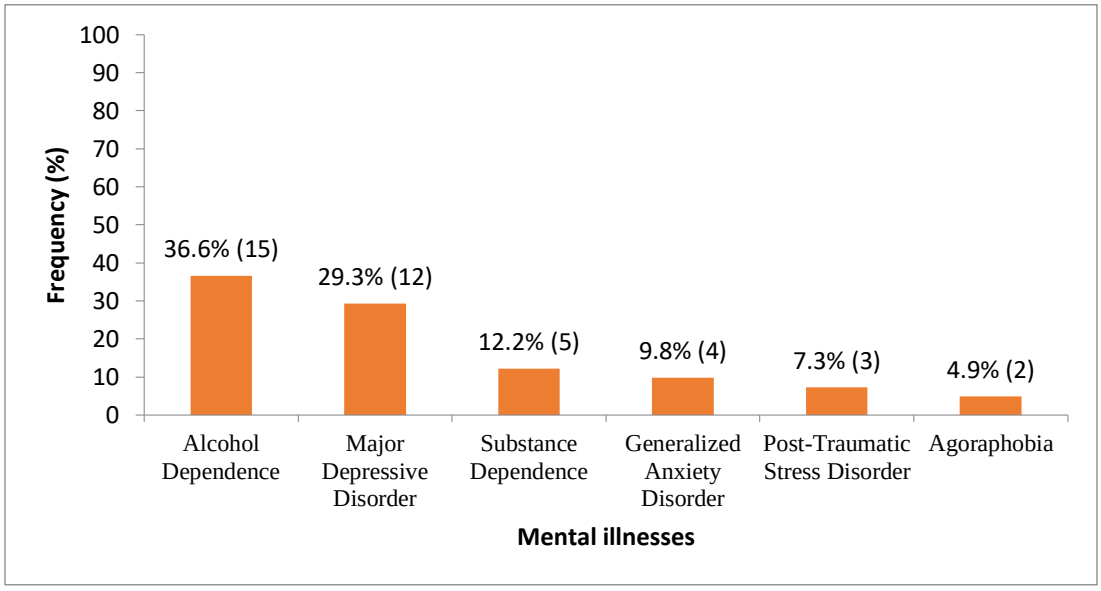


Figure 3: Occurrence of mental illness

4.4. Prevalence of substance use

More than half of the respondents (57.9%) reported that they had not used any of the substances mentioned, with 27.9% using a single drug and 14.2% using multiple drugs.

Table 6: Prevalence of substance abuse among military personnel in Botswana defence force

Category	Number	Percentage
Single drug	106	27.9
Multiple drugs	54	14.2
None	220	57.9
Total	**380**	**100**

For the respondents using two or more substances, the usage of tobacco and alcohol was the most prevalent (51.9%), followed by alcohol and cannabis (20.3%).

Table 7: Prevalence of multiple substance use

Substances	Frequency	Percentage
Tobacco & Alcohol	28	51.9
Alcohol & Cannabis	11	20.3
Tobacco & Cannabis	6	11.1
Tobacco, Alcohol & Cannabis	9	16.7
Total	**54**	**100**

For respondents using single substance, alcohol was the most commonly used, followed by tobacco and cannabis.

Table 8: Prevalence of single substance use

Substances	Frequency	Percentage
Tobacco	35	33.0
Alcohol	55	51.9
Cannabis	16	15.1
Total	**106**	**100**

For military personnel using single substance, moderate substance use was the highest for all substances, 68(64.15%) followed by mild 23(21.7%), and severe of use, 15(14.15%).

Table 9: Severity of single substance usage

Substances	Severity [N (%)]			N
	Mild	Moderate	Severe	
Tobacco	8(22.86%)	25(71.43%)	2(5.71%)	35
Alcohol	10(18.18%)	34(61.82%)	11(20%)	55
Cannabis	5(31.25%)	9(56.25%)	2(12.5%)	16
Total	**23(21.7%)**	**68(64.15%)**	**15(14.15%)**	**106**

4.5. Association between common mental illnesses and substance use

To assess the association between mental illnesses and substance use a chi-square analysis was done.

The results revealed a statistically significant association between mental illness and substance use, (χ^2=31.126, p-value=0.0025). The results showed that 75.6% of the respondents who meet the diagnostic criteria for mental illness were using at least one substance.

Table 10: Association between Substance use and Mental illness

Substance use	Mental illness [N (%)]		N	χ2(p-value)
	Yes	No		
Yes	31(75.6%)	75(22.1%)	106	
No	10(24.4%)	264(77.9%)	274	31.126 (0.0025)
N	**41**	**339**	**380**	

There was a statistically significant association between major depressive disorder and cannabis use, (χ^2=11.813, p-value=0.006).

Table 11: Association between Substance use and Major Depressive Disorder

Substance		Major Depressive Disorder		N	χ^2(p-value)
		No	Yes		
Tobacco	No	289(96.3%)	11(3.7%)	300	1.206 (0.242)
	Yes	79(98.8%)	1(1.3%)	80	
	N	**368(96.8%)**	**12(3.2%)**	**380**	
Alcohol	No	269(97.1%)	8(2.9%)	277	0.243 (0.417)
	Yes	99(96.1%)	4(3.9%)	103	
	N	**368(96.8%)**	**12(3.2%)**	**380**	
Cannabis	No	331(97.9%)	7(2.1%)	338	11.813 (0.006)
	Yes	37(88.1%)	5(11.9%)	42	
	N	**368(96.8%)**	**12(3.2%)**	**380**	

There was a statistically significant association between agoraphobia and cannabis use, (χ^2=12.791, p-value=0.0250).

Table 12: Association between Substance use and Agoraphobia

Substance		Agoraphobia		N	χ^2(p-value)
		No	Yes		
Tobacco	No	299(99.7%)	1(0.3%)	300	1.014 (0.377)
	Yes	79(98.8%)	1(1.3%)	80	
	N	**378(99.5%)**	**2(0.5%)**	**380**	
Alcohol	No	276(99.6%)	1(0.4%)	277	0.533(0.469)
	Yes	102(99%)	1(1%)	103	
	N	**378(99.5%)**	**2(0.5%)**	**380**	
Cannabis	No	336(99.4%)	2(0.6%)	338	12.791 (0.0250)
	Yes	42(100%)	0(0%)	42	
	N	**378(99.5%)**	**2(0.5%)**	**380**	

There was a statistically significant association between post-traumatic stress disorder and alcohol use, (χ^2=12.395, p-value=0.0180) and also between post-traumatic stress disorder and cannabis use, (χ^2=11.527, p-value=0.0297).

Table 13: Association between Substance use and Post-Traumatic Stress Disorder

Substance		Post-Traumatic Stress Disorder		N	χ^2(p-value)
		No	Yes		
Tobacco	No	299(99.7%)	1(0.3%)	300	3.785 (0.114)
	Yes	78(97.5%)	2(2.5%)	80	
	N	**377(99.2%)**	**3(0.8%)**	**380**	
Alcohol	No	276(99.6%)	1(0.4%)	277	12.395 (0.0180)
	Yes	101(98.1%)	2(1.9%)	103	
	N	**377(99.2%)**	**3(0.8%)**	**380**	
Cannabis	No	336(99.4%)	2(0.6%)	338	11.527 (0.0297)
	Yes	41(97.6%)	1(2.4%)	42	
	N	**377(99.2%)**	**3(0.8%)**	**380**	

There was a statistically significant association between alcohol dependence and alcohol use, (χ^2=34.667, p-value≤0.001) and also alcohol dependence and cannabis use, (χ^2=10.306, p-value≤0.001).

Table 14: Association between Substance use and Alcohol Dependence

Substance		Alcohol Dependence		N	χ^2(p-value)
		No	Yes		
Tobacco	No	288(96%)	12(4%)	300	0.010 (0.609)
	Yes	77(96.3%)	3(3.8%)	80	
	N	**365(96.1%)**	**15(3.9%)**	**380**	
Alcohol	No	276(100.0%)	0(0.0%)	276	34.667 (≤0.001)
	Yes	88(85.4%)	15(14.6%)	103	
	N	**365(96.1%)**	**15(3.9%)**	**380**	
Cannabis	No	324(95.9%)	14(4.1%)	338	10.306 (0.0491)
	Yes	41(97.6%)	1(2.4%)	42	
	N	**365(96.1%)**	**15(3.9%)**	**380**	

There was a statistically significant association between substance dependence and tobacco use, (χ^2=14.624, p-value=0.0065) and also cannabis use, and also substance dependence and cannabis use, (χ^2=12.348, p-value=0.011).

Table 15: Association between Substance use and Substance Dependence

Substance		Substance Dependence		N	χ^2(p-value)
		No	Yes		
Tobacco	No	298(99.3%)	2(0.7%)	300	14.624 (0.0065)
	Yes	77(96.3%)	3(3.8%)	80	
	N	**375(98.7%)**	**5(1.3%)**	**380**	
Alcohol	No	272(98.2%)	5(1.8%)	277	1.884 (0.204)
	Yes	103(100%)	0(0%)	103	
	N	**375(98.7%)**	**5(1.3%)**	**380**	
Cannabis	No	336(99.4%)	2(0.6%)	338	12.348 (0.011)
	Yes	39(92.9%)	3(7.1%)	42	
	N	**375(98.7%)**	**5(1.3%)**	**380**	

There was a statistically significant association between generalized anxiety disorder and cannabis use, (χ^2=14.693, p-value=0.026).

Table 16: Association between Substance use and Generalized Anxiety Disorder

Substance		Generalized Anxiety Disorder		N	χ^2(p-value)
		No	Yes		
Tobacco	No	297(99%)	3(1%)	300	0.038 (0.613)
	Yes	79(98.8%)	1(1.3%)	80	
	N	**376(98.9%)**	**4(1.1%)**	**380**	
Alcohol	No	276(99.6%)	1(0.4%)	277	0.800 (0.375)
	Yes	100(97.1%)	3(2.9%)	103	
	N	**376(98.9%)**	**4(1.1%)**	**380**	
Cannabis	No	335(99.1%)	3(0.9%)	338	14.693 (0.026)
	Yes	41(97.6%)	1(2.4%)	42	
	N	**376(98.9%)**	**4(1.1%)**	**380**	

4.6. Socio-demographic correlates of substance use

There was a statistically significant association between Rank and mental illness (χ^2=18.065, p-value=0.0127) and also marital status and mental illness (χ^2=9.367, p-value=0.025).

In terms of military rank, the highest prevalence of mental illness was recorded among Lance Corporals (20.83%), Privates (17.01%), and Corporals (16.67) (non-officers). For officers the highest prevalence of mental illness was recorded among Second Lieutenants (9.52%).

For marital status, the highest prevalence was recorded among respondents who are divorced (50%), followed by those who are widowed (33.33%), then those who have never been married (11.89%) and the least among those who are married (10.85%).

Table 17: Association between Socio demographic factors and mental illness

Socio demographic factors		Mental illness [N (%)]		N	$\chi 2$(p-value)
		Yes	No		
Gender	Female	6(7.41%)	75(92.59%)	81	1.998 (0.134)
	Male	35(11.71%)	264(88.29%)	299	
	N	41(10.79%)	339(89.21%)	380	
Category	Officers	14(9.03%)	141(90.97%)	155	1.385 (0.350)
	Non officers	27(12%)	198(88%)	225	
	N	41(10.79%)	339(89.21%)	380	
Rank	Private	15(17.01%)	73(83.99%)	88	18.065 (0.0127)
	Lance Corporal	10(20.83%)	38(79.17%)	48	
	Corporal	6(16.67%)	30(83.33%)	36	
	Sergeant	1(5%)	19(95%)	20	
	Staff Sergeant	1(5.26%)	18(94.74%)	19	
	Warrant Officer II	1(9.09%)	10(90.91%)	11	
	Warrant Officer I	0(0%)	3(100%)	3	
	Second Lieutenant	2(9.52%)	19(90.48%)	21	
	Lieutenant	2(3.64%)	53(93.36%)	55	
	Major	1(4.17%)	23(95.83%)	24	
	Captain	1(2.78%)	35(97.22%)	36	
	Lieutenant Colonel	1(7.70%)	12(92.30%)	13	
	Colonel	0(0%)	6(100%)	6	
	N	41(10.79%)	339(89.21%)	380	
Marital status	Divorced	2(50%)	2(50%)	4	9.367 (0.025)
	Married	6(10.85%)	115(93.80%)	129	
	Single	29(11.89%)	218(88.11%)	244	
	Widowed	3(33.33%)	1(66.67%)	3	
	N	41(10.79%)	339(89.21%)	380	
Years of service	1 year to 5 years	13(10.16%)	115(89.84%)	128	4.271 (0.181)
	6 years to 10 years	14(14%)	86(86%)	100	
	11 years to 15 years	6(9.84%)	55(90.16%)	61	
	16 years to 20 years	3(7.69%)	36(92.31%)	39	
	21 years to 25 years	4(10.81%)	33(89.19%)	37	
	Above 25 years	1(6.67%)	14(93.33%)	15	
	N	41(10.79%)	339(89.21%)	380	

There was a statistically significant association between Rank and Substance use (χ^2=36.065, p-value=0.002) and also marital status and substance use (χ^2=13.673, p-value=0.013).

In terms of rank, the highest prevalence of substance use recorded among non-commissioned officers included Corporals (52.78%), Privates (52.27%), and Lance Corporals (41.67%). For commissioned officers, the highest rank was recorded among Lieutenants (45.45%), and Captains (44.44%), and Second Lieutenants (42.86%).

For marital status, the highest prevalence of substance use was recorded among those who are divorced (75%), widowed (66.67%), never been married (45.08%), and the least among those who are married (34.89).

Table 18: Association between Socio demographic factors and substance use

Socio demographic factors		Substance use [N (%)]		N	$\chi 2$(p-value)
		Yes	No		
Gender	Female	31(38.27%)	50(61.73%)	81	0.428 (0.316)
	Male	129(43.14%)	170(56.86%)	299	
	N	160(42.11%)	220(57.89%)	380	
Category	Officers	57(36.77%)	98(63.23%)	155	2.853 (0.521)
	Non officers	103(45.78%)	122(54.22%)	225	
	N	160(42.11%)	220(57.89%)	380	
Rank	Private	46(52.27%)	42(55.68%)	88	36.065 (0.002)
	Lance Corporal	20(41.67%)	28(58.33%)	48	
	Corporal	19(52.78%)	17(47.22%)	36	
	Sergeant	7(35%)	13(45%)	20	
	Staff Sergeant	5(26.32%)	14(57.89%)	19	
	Warrant Officer II	1(9.09%)	10(54.55%)	11	
	Warrant Officer I	1(33.33%)	2(66.67%)	3	
	Second Lieutenant	9(42.86%)	12(76.19%)	21	
	Lieutenant	25(45.45%)	30(61.82%)	55	
	Major	6(25%)	18(62.5%)	24	
	Captain	16(44.44%)	20(55.56%)	36	
	Lieutenant Colonel	3(23.08%)	10(76.92%)	13	
	Colonel	2(33.33%)	4(66.7%)	6	
	N	160(42.11%)	220(57.89%)	380	
Marital status	Divorced	3(75%)	1(25%)	4	13.673 (0.013)
	Married	45(34.89%)	84(65.11%)	129	
	Single	90(45.08%)	134(54.92%)	244	
	Widowed	2(66.67%)	1(33.33%)	3	
	N	160(42.11%)	220(57.89%)	380	
Years of service	1 year to 5 years	56(43.75%)	72(56.25%)	128	0.785 (0.258)
	6 years to 10 years	35(35%)	65(65%)	100	
	11 years to 15 years	18(29.51%)	43(70.49%)	61	
	16 years to 20 years	9(23.08%)	30(76.92%)	39	
	21 years to 25 years	37(100.00%)	0(0%)	37	
	Above 25 years	5(42.11%)	10(57.89%)	15	
	N	160(42.11%)	220(57.89%)	380	

There was a statistically significant association between trauma exposure and mental illness (χ^2=15.126, p-value=0.050). For participants who met the diagnostic criteria for mental illness, 63.41% of them had been exposed to trauma at one point in their military career.

Table 19: Association between trauma exposure and mental illness

Trauma	Mental illness [N (%)]		N	χ2(p-value)
	Yes	No		
Yes	26(63.41%)	115(33.92%)	141	
No	15(36.59%)	224(66.08%)	239	5.126 (0.050)
N	**41(10.79%)**	**339(89.21%)**	**380**	

There was a statistically significant association between trauma exposure and Substance use (χ^2=33.802, p-value≤0.001). For participants using substance, 60% of them had been exposed to trauma at one point in their military career.

Table 20: Association between trauma exposure and substance use

Trauma	Substance use [N (%)]		N	χ2(p-value)
	Yes	No		
Yes	96(60%)	45(20.45%)	141	
No	64(40%)	175(79.55%)	239	33.802 (≤0.001)
N	**160**	**220**	**380**	

CHAPTER 5: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

This study looked at common mental illnesses and substance use among military personnel in Botswana Defence Force. Mental illness and substance use has been a major concern for active military personnel and veterans across the world, (Kaezeem & Abdulkarim, 2014). Substance use has a serious negative consequences among military personnel and it also affects military operations. Different studies have explained higher rate of excessive drinking and substance use among military personnel as compared to civilian personnel. Substance use, especially alcohol, tobacco, and cannabis, have been reported to be the most commonly used among military personnel, (Kaezem & Abdulkarim, 2014)

The prevalence of substance use among military personnel in Botswana Defence Force is 42.1%. A study conducted on roughly 43 000 active military personnel in North Carolina showed that almost half (44%) were at risk of alcohol use, but only 4% of these military personnel were referred for treatment, (Pickett et al., 2015). Despite focusing only on alcohol, this study shows the prevalence of substance use in North Carolina and Botswana military personnel is almost similar.

Another study by Witkiewitz and Estrada (2011) revealed that about 70% of military personnel in U S who have been previously deployed in Afghanistan and Iraq reported alcohol consumption in the past 30 days, drinking an average of 3.31 drinks per day, and 2.9 days of binge drinking in the past 30 days. History of previous deployment has been shown as a risk factor for substance use and mental illness among military personnel. Therefore the high prevalence of substance use in this study compared to the current study is mainly because they only focused on military personnel who have been previously deployed.

A study conducted by Kazeem and Abdulkarim (2014) among Nigerian military personnel revealed that, among 22400 military personnel used in the study, 18.5% were involved in substance abuse of at least one substance (alcohol, tobacco, or cannabis), and 8.5% of the respondents were involved in substance abuse of at least two of the above mentioned substances. The findings are almost similar to the finding of the present study as 14.2% scored severe single substance use for the same substances compared to 18.5% among Nigerian military personnel.

On overall the prevalence of substance use is relatively high among military personnel compared to the general population as explained in several studies. Considering the nature of their duties, this has a negative impact among the soldiers and the organization at large. Heavy substance use has a negative impact on the individual's health and overall functioning, which negatively affects productivity in the workplace, (Stein, et al., 2017). These use of these substances have negative impacts in the overall productivity of the BDF, as it interferes with the military operation and the fitness of military personnel. Military personnel operate complex weapons therefore the use of substances that affect human cognition and behavior may result in a carelessness while operating these machines which may results in injuries and deaths.

The second objective of this study was to determine the prevalence of common mental disorders among military personnel in Botswana Defence Force. The prevalence of common mental illnesses among military personnel in BDF recorded in this study was 10.8%, and the common mental illnesses identified were; alcohol dependence major depressive disorder anxiety disorders substance dependence and posttraumatic stress disorder.

The common mental disorders identified in this study are similar to those experienced among military personnel across the world, though they differ in terms of prevalence. As explained by Robertson (2016), military life exposes soldiers to different stressors and potential

traumas, and these put them at an increased risk of mental health problems such as major depressive disorders (MDD), generalized anxiety disorders (GAD), and posttraumatic stress disorders (PTSD).

A study by Al-Almri and Al-Almri (2013) revealed that among soldiers returning from military duties in Afghanistan and/or Iraq, it has been estimated that roughly 30% of them had a mental health problems; out of which 7% were diagnosed with depression, 7.5% with anxiety disorders, and 12% with PTSD. The statistics done in 2014 by Department of Defense (DoD) revealed that that 57.2% of the 1.16 million veterans that were registered with the Department of Veteran Affairs Healthcare were identified with at least one mental health diagnosis, and the most prominent psychological problems identified were PTSD, depressive disorders, and other anxiety disorders excluding PTSD, (Pickett et al., 2015).

PTSD has been shown to be the most common mental disorder among military personnel simply because of the trauma they go through in carrying their military duties. This study has recorded low statistics of PTSD compared to previous studies simply because previous studies have focused more on specific populations within the military, especially soldiers returning from combat and other traumatic military duties such as peace keeping military operations. A study by Okulate and Jones (2006) revealed that the prevalence of PTSD among Nigerian Army peace keepers deployed between 1999 and 2006 peace keeping operation in Sierra Leone was 22%. Another study conducted by Van Dyk (2016) revealed that the prevalence of PTSD among military personnel of South African National Defence Force (SANDF) who were deployed in peace keeping operations in Rwanda which started in 2004 was 26%.

BDF's main operations include anti-poaching and border posts, and very few have gone for peace keeping operations therefore the nature and severity of trauma encountered by military

personnel is significantly less compared to other countries. The stability and peace within Botswana also significantly reduces life threatening military operations such as terror attacks, political instabilities and other life threatening operations as compared to other countries, and this works in favor of psychological well-being for BDF members.

The nature of military duties differ across countries and this has significant influence in mental health among soldiers in such countries. Military personnel with combat exposure are 2.59 times more likely to develop PTSD than military personnel without combat exposure (Picket et al., 2015). According to Okulate and Jones (2006), the most common PTSD co-occurring disorders among active duty members are; substance use disorders (75%), generalized anxiety disorder (44%) and these disorders have also been identified as the most common mental illnesses among military personnel in BDF.

Depression and alcohol dependence were identified as the most common mental illnesses among military personnel in BDF. A study conducted by Al-Almri and Al-Almri (2013) in Taif region revealed that the prevalence of depression among active service members is 17.1% and is linked to several factors such as smoking and poor working relation with co-workers and supervisors. Another study conducted by Kazeem and Abdulkarim (2014), revealed that the prevalence of depression among military personnel in Nigeria was 12.6%. Among military personnel in BDF, depression may be due to several factors such as poor working relations with co-workers, loneliness and isolation from family members during deployment, and other general duties of a soldier which can be very stressing.

On overall, common mental illnesses among military personnel are the same for all active duty members and veterans across the world. They only differ in terms of prevalence and severity which is determined largely by the type of military duties each defence force or army is

exposed to such as combat expose, peace keeping operations and other traumatic military operations.

The third objective was to identify if there is any association between substance use and mental illnesses among military personnel in BDF. The study revealed statistically significant association between mental illness and substance use (p=0.0025), indicating that 76.6% of those who met the diagnostic criteria were using at least one substance.

According to (Stein et al., 2017) depression and suicide are the most common psychological problems among people who meet the diagnostic criteria for alcohol or substance dependence. The present study also highlighted a significant association between major depressive disorder and cannabis use. Also, cannabis use has been shown to be linked with amotivation syndrome, or general lack of motivation to perform daily activities, and this may have a negative impact on military personnel and military organization at large.

Several studies have also identified an association between PTSD and substance use among military personnel across the world. A study by Okulate and Jones (2006) revealed that substance use is the most common PTSD co-occurring disorder, as their study found that 75% of Nigerian military personnel diagnosed with PTSD have substance use disorder. According to APA (2017), 77.7% of active military personnel hospitalized for treatment of PTSD had a co-occurring psychiatric diagnosis, with alcohol abuse or dependence being reported as the most frequent comorbidity (27.8%). The present study also highlighted a significant association between PTSD and alcohol use as 67% of the respondents who met the diagnostic criteria for PTSD were using alcohol.

The final objective was to explore socio demographic correlates of mental illness and substance. The current study revealed a significant association between military rank and mental

illness, with the highest prevalence recorded among lower ranks which are; Privates, Lance Corporals and Corporals for non-officers (17.01%, 20.83%, and 16.67% respectively). According to a study by Harbertson, Grillo, Zimulinda, Murego, Cronan, and May (2013) conducted among Rwanda military personnel, soldiers of lower ranks are more likely to have depressive symptoms because of their work related stress and lower pay.

In BDF, soldiers of lower ranks or non-commissioned officers, are recruited immediately after completing their high school, whereas commissioned officers are recruited with a minimum of degree qualification. Therefore they also differ it terms of educational level which has also been shown to be a protective factor for mental illness and substance use. According to Zimmerman & Woolf (2014), adults with higher educational attainment are less likely to be involved in risky behaviors such as heavy drinking and smoking, and they are also likely to engage themselves in healthy behaviors such as sports and exercise. Therefore for this study, it is difficult to single out rank only as one of the determinants of substance use and mental illness because lower ranks have lower educational level which is also a protective factor against mental illness and substance use.

For commissioned officers, the highest prevalence was recorded among Second Lieutenants (9.52%), which is the lowest rank in the officer cadre. High prevalence of substance use among military personnel of this rank can be attributed to adjustments into military environment and stress associated with military life as they are new in the military. They have just separated from their immediate environment which is family members and relatives, and also their cultural and professional background which they are used to, and join a completely new environment which is military life. According to the ecological systems systems theory, this change can lead to about psychological distress.

There was also a statistically significant association between marital status and mental illness, with the highest prevalence recorded among those who have never been married, and the lowest among those who are married. According to Morgan, Hourani, and Tueller (2017), support system within the individual's immediate environment has also been highlighted as a protective factor for developing mental illness among military personnel. Military families play a very important role in helping to prepare military personnel for deployment, offering emotional support and motivation, and helping with restoration of normal functioning after returning home, (APA, 2017).

For substance use, there was also a statistically significant association between military rank and substance use, with those who are married also recording the lowest prevalence of substance use. Therefore this study has also identified marriage as a protective socio-demographic factor for mental illness and substance use among military personnel in BDF. Being single or not being married in the military may lead to loneliness and isolation, and may also result in having a lot of free time after work which may predispose military personnel to substance use. According to Varcarolis (2013), drinking alcohol diminishes tension and lessen the consequences of psychological pain, and many people also report that alcohol reduces the feelings of anxiety, and help them manage the stresses of their daily living. High prevalence of substance use among military personnel in BDF may be a negative way of coping with psychological pain associated with military duties.

The study also revealed a statistically significant association between exposure to trauma and mental illness, and also exposure to trauma and substance. These findings highlighted that trauma exposure in the military as a risk factor for substance use and mental illness among military personnel in BDF. Most trauma in the military happen during

deployment, therefore those who have been previously deployed are at a higher risk of experiencing trauma. According to Pickett et al. (2015), the risk of alcohol misuse among military personnel previously deployed to Iraq is two times more compared to those who have not been deployed. Van Dyk (2016) also highlighted that military personnel who have been previously deployed, especially in combat roles, are at higher risks for mental health problems than military personnel who have not been deployed.

Despite the high prevalence of mental illness and substance use among military personnel, it is a major concern that majority of these people do not seek help. Among the 380 respondents who took part in these study, none of them reported that they had ever gone for mental illness or substance use treatment despite the high statistics for substance use and mental illness. A study conducted by Al-Almri and Al-Almri (2013) revealed that only 19% of active duty members with serious mental health condition seek help, therefore there is a serious concern for untreated psychological condition among military personnel. Another study conducted by Nedegaard and Zwilling (2017) revealed that an estimate of 60% of military personnel who experience mental health problems do not seek help.

Different studies have offered different explanations on why military personnel do not seek help for mental health illnesses. Some of these factors may be specifically be related to the military; military training for example requires mental toughness and endurance or 'soldering on'- pushing through the difficulties and continue working despite the challenges rather than showing weakness or asking for help form other members, (Dickstein, Vogt, Handa, and Litz, 2010). Therefore soldiers are unable to differentiate mental toughness from mental illness. When they have severe psychological problems they want to 'soldier on' and continue with military duties rather than seeking treatment for their psychological pain so that they remain mentally fit

for military duties. They perceive seeking help for psychological problems as a sign of weakness or inability to cope with stress.

Another barrier to seeking help is stigma and discrimination; that is the perception of supervisors and co-workers will have about their seeking of psychological help, or unit members no longer trusting them and not allowing them to handle weapons. In BDF, military personnel with mental illness are not allowed to handle weapons, they are only deployed to do administrative work. These military personnel may feel that they are being stigmatized and discriminated against, or feel that their soldiering skills have been taken away from them as they are not allowed to use weapons and go for military operations. Therefore soldiers may refuse to seek help or disclose their mental health conditions. According to Nedegaard and Zwilling (2017), military personnel may agree that civilian providers are competent professionally, but they lack in-depth understanding of soldiers' experiences, challenges and language, and this is one of the main reason why they discontinue with community-based treatment after a single visit.

5.2. Conclusion

Military personnel have higher prevalence of mental illness and substance use compared to the general population. Substance, particularly cannabis use was shown to be significantly associated with mental illness among military personnel in BDF. Married soldiers reported low prevalence of substance use and mental illness therefore being married was identified as a protective factor against mental illness and substance use among military personnel in BDF. Exposure to trauma on the other hand was identified as a risk factor for mental illness and substance use among military personnel in BDF. Despite the high prevalence of substance use and mental illness among military personnel in BDF, military personnel do not seek help for psychological problems. Therefore the common mental illnesses and comorbid psychiatric conditions remain undiagnosed and untreated, resulting in loss of jobs by active duty members on medical grounds.

5.3 Recommendations

- Screening: Soldiers returning from deployment and other major operations should be screened for any clinical symptoms of trauma and other mental health illnesses so that they can receive treatment as early as possible, as most trauma exposure occurs during deployment.
- Psycho-education: For those who have not been deployed, it is important for them to be educated about common mental illness in the military and the clinical symptoms, and encourage them to seek help when they experience such symptoms. It is important for military personnel to be educated on the difference between mental toughness and psychological illness, as they associate seeking psychological help as a sign of mental weakness.

- Provision of mental health services: BDF should consider hiring multi-disciplinary mental health professionals which includes; psychiatrist, clinical psychologists, and social workers who are military personnel. Their understanding of military personnel and military culture will help them effectively address mental health and substance use in the military.

5.4 Limitations

One limitation of this study is that the researcher conducting the study was a member of medical board in BDF, a team of health professionals responsible for assessing military personnel for fitness for duty. This might have caused some military personnel not to be as honest as possible, associating the study with medical board, even though the objectives were well explained to them. The study also focused on two randomly selected military camps out of the eight camps, therefore it may be difficult to generalize to other camps, particularly those that differ in terms of geographical location.

5.5 Area for further study.

Future studies should focus more on exploring patterns substance use and mental illness among military personnel using a qualitative approach to gain an in-depth understanding of soldiers' lived experiences which predispose them to substance use and mental illness. Also comparative studies can be done on military personnel. Different instruments such as PTSD checklist, Beck Depression Inventory can be used to assess severity of common mental illness in BDF. Comparative studies can also be done to explore the impacts of socio-demographic variables such as marriage and exposure to trauma on military personnel in BDF using qualitative approach.

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APPENDICES

APPENDIX A: PARTICIPANT INFORMATION AND CONSENT FORM

TITLE OF STUDY: MENTAL ILLNESS AND SUBSTANCE USE AMONG MILITARY PERSONNEL IN BOTSWANA DEFENCE FORCE

Principal Investigator\and institutional affiliation: PHEMELO THAPELO MOGOTSI: UNIVERSITY OF NAIROBI-SCHOOL OF MEDICINE

Introduction:

I would like to tell you about a study that I am conducting. The purpose of this consent form is to give you the information you will need to help you decide whether or not to be a participant in the study. Feel free to ask any questions about the purpose of the research, what happens if you participate in the study, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions to your satisfaction, you may decide to be in the study or not. This process is called 'informed consent'. Once you understand and agree to be in the study, I will request you to sign your name on this form. You should understand the general principles which apply to all participants in a medical research: i) Your decision to participate is entirely voluntary. ii) You may withdraw from the study at any time without necessarily giving a reason for your withdrawal. iii) Refusal to participate in the research will not affect the services you are entitled to in this organization. We will give you a copy of this form for your records.

May I continue? YES / NO

This study has approval by The Kenyatta National Hospital-University of Nairobi Ethics and Research Committee protocol **No. P20/01/2019.**

WHAT IS THIS STUDY ABOUT?

The purpose of the interview is to find out common mental illness and substance use among military personnel in Botswana Defence Force. Participants in this research study will be asked questions about mental illness and substance use in their military career. There will be approximately 382 participants in this study randomly chosen. We are asking for your consent to consider participating in this study.

WHAT WILL HAPPEN IF YOU DECIDE TO BE IN THIS RESEARCH STUDY?

If you agree to participate in this study, the following things will happen:

You will be interviewed by a trained interviewer in a private area where you feel comfortable answering questions. The interview will last approximately 20 minutes interview will cover topics such as mental illnesses and substance use.

After the interview has finished, participants who are distressed by the interview process including sharing their experiences regarding mental health may be referred to a clinical psychologist in the military hospital at SSKB. Participants with severe substance use problems will also be referred to the hospital for treatment and further management. I will ask for a telephone number where I can contact you if necessary. If you agree to provide your contact information, it will be used only by the researcher and will never be shared with others.

ARE THERE ANY RISKS, HARMS DISCOMFORTS ASSOCIATED WITH THIS STUDY?

Medical research has the potential to introduce psychological, social, emotional and physical risks. Effort should always be put in place to minimize the risks. One potential risk of being in the study is loss of privacy. We will keep everything you tell us as confidential as possible. We will use a code number to identify you in a password-protected computer database and will keep all of our paper records in a locked file cabinet. However, no system of protecting your confidentiality can be absolutely secure, so it is still possible that someone could find out you were in this study and could find out information about you.

Also, answering questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them. You have the right to refuse the interview or any questions asked during the interview.

It may be embarrassing for you to have substance use problems or mental health problems. We will do everything we can to ensure that this is done in private. Furthermore, the researcher is a professional with special training in these interviews.

You may feel some discomfort when sharing about stressful event. There are no physical injuries expected for participating in this study. In case of an injury, illness or complications related to this study, contact the researcher right away at the number provided at the end of this document.

ARE THERE ANY BENEFITS BEING IN THIS STUDY?

By taking part in this study you will have the opportunity to learn more by asking question about mental illness in the military. Participants who screen positive for mental health and substance use problems will benefit from the study as they will be referred for treatment. There are not costs or expenses for participating in this study.

WHAT IF YOU HAVE QUESTIONS IN FUTURE?

If you have further questions or concerns about participating in this study, please call or send a text message to the study staff at the number provided at the bottom of this page.

For more information about your rights as a research participant you may contact the Secretary/Chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committee Telephone No. 2726300 Ext. 44102 email uonknh_erc@uonbi.ac.ke.

The researcher will pay you back for your charges to these numbers if the call is for study-related communication.

WHAT ARE YOUR OTHER CHOICES?

Your decision to participate in research is voluntary. You are free to decline participation in the study and you can withdraw from the study at any time without injustice or loss of any benefits.

CONSENT FORM (STATEMENT OF CONSENT)

Participant's statement

I have read this consent form or had the information read to me. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time. I freely agree to participate in this research study.

I understand that all efforts will be made to keep information regarding my personal identity confidential. By signing this consent form, I have not given up any of the legal rights that I have as a participant in a research study.

I agree to participate in this research study: Yes No

I agree to provide contact information for follow-up: Yes No

Participant names: _____

Participant signature _____ Date _____

Researcher's statement

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has willingly and freely given his/her consent.

Researcher's Name: _____ Date: _____

Signature_____

Contacts

Principal investigator: Mogotsi Phemelo Thapelo (MSC Clinical Psychology)

University of Nairobi, School of Medicine, Department of Psychiatry

Contacts

Email: thapelomogotsi@yahoo.com

+254 743300646 Kenya, or +267 72926784 Botswana

Supervised by

Dr. Linkhon Khasakhala

Dr Mburu

Approved by

KNH-UoN Ethical Review Committee

Email uonknh_erc@uonbi.ac.ke

Telephone No. 2726300 Ext. 44102

APPENDIX B: TIMELINE AND BUDGET

Table 1: Research Work Plan

ACTIVITY	TIME FRAME
Writing proposal and defence presentation	August to December 2018
Submitting proposal for ethical clearance	January 2019
Data collection	April 2019
Data analysis	July 2019
Results presentation	February 2020
Report writing	March 2020
Submission of thesis	July 2021

Table 2: Budget

NO	CATEGORY/ITEM	ESTIMATED COSTS FOR ITEMS Botswana Pula (BWP)
1	Charges for KNH/UoN-ERC Proposal Review	300
2	Data collection expenses: printing informed consent, ASSIST and MINI 7 for 382 participants, 50 pens	6000
3	Operational expenses: (flight ticket to Botswana, study site (P10 000), transportation around the military camps (P500)	10500
4	Printing	3500
5	Data analysis (hiring statistician to assist with SPSS data analysis and interpretations)	3000
6	Printing and binding thesis	1500
7	Contingency fund (10% of the total)	2500
	TOTAL	**27300**

APPENDIX C: PERMISSION TO CONDUCT RESEARCH IN BOTSWANA DEFENCE FORCE

TELEPHONE: 3662013
TELEGRAMS: DEFENCE

COMMANDER,
BOTSWANA DEFENCE FORCE,
PRIVATE BAG X06,
GABORONE VILLAGE,
BOTSWANA.

REFERENCE: PF 295158

16th August, 2018

Captain P T Mogotsi
P O Box 138
Kopong

Dear Captain,

REQUEST FOR PPERMISION TO UNDERTAKE RESEARCH WITHIN THE BDF – YOURSELF

1. Reference is made to your letter dated 23rd July 2018 directed to us on the above captioned matter.

2. This serves to inform you that your request for permission to conduct a study on the Prevalence/ Frequency of Common Mental Disorders Among Military Personnel in the Botswana Defence Force during the period February- May 2019 has been approved.

3. By this correspondence, BDF HQ J1 Accounts Clerk is directed to pay you Masters level research allowance amounting to P4,500.00 for the research as per official entitlement.

4. You are further reminded that the research findings should only published under classified journals.

5. Thank you.

SOII HRP (SS)
16 -08- 2018
Headquarters
Botswana Defence Force

Yours faithfully

Captain T. Mosarwa
For/COMMANDER, BOTSWANA DEFENCE FORCE

cc. BDF HQ J1 Accounts Clerk.

APPENDIX D: ETHICS APPROVAL, KNH ERC

UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355

KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

APPROVED 06 MAR 2019 KNH/UoN-ERC

Ref: KNH-ERC/A/82

6th March, 2019

Phemelo Thapelo Mogotsi
Reg.No.H56/7989/2017
Dept. of Psychiatry
School of Medicine
College of Health Sciences
University of Nairobi

Dear Phemelo

RESEARCH PROPOSAL: MENTAL ILLNESS AND SUBSTANCE USE AMONG MILITARY PERSONNEL IN BOTSWANA DEFENCE FORCE (P20/01/2019)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 6th March 2019 – 5th March 2020.

This approval is subject to compliance with the following requirements:

a. Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b. All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
c. Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
d. Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
e. Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
f. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
g. Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website **http://www.erc.uonbi.ac.ke**

Yours sincerely,

PROF. M. L. CHINDIA
SECRETARY, KNH-UoN ERC

c.c. The Principal, College of Health Sciences, UoN
The Director, CS, KNH
The Chairperson, KNH- UoN ERC
The Assistant Director, Health Information, KNH
The Dean, School of Medicine, UoN
The Chair, Dept. of Psychiatry, UON
Supervisors: Dr. Lincoln Khasakhala, Dr. John M. Mburu

APPENDIX E: DEMOGRAPHIC INFORMATION AND ASSIST (adapted)

PART A: DEMOGRAPHIC INFORMATION

GENDER: Male ☐ Female ☐

AGE: ☐

MILITARY RANK: _____

MARITAL STATUS: Single ☐ Married ☐ Divorced ☐ Widowed ☐

CONFOUNDING VARIABLES

i. Have you ever been exposed to a life threatening (traumatic) event in the military?
Yes ☐ No ☐

ii. Have you ever been treated for mental illness?
Yes ☐ No ☐

iii. How long have you worked in the military (years)? ☐

PART B

ALCOHOL, SMOKING, AND SUBSTANCE INVOLVEMENT SCREENING TEST

Please answer the following questions about your experience with alcohol, tobacco and marijuana across your lifetime and in the past 3 months.

QUESTION 1

In your life, which of the following substance have you ever used?	**Yes**	**No**
a. Tobacco products		
b. Alcohol beverages		
c. Marijuana		

If the answer is **Yes** to any of these items, please proceed to question 2, if **No** to all items, please do not proceed.

QUESTION 2

In the past three months, how often have you used the substances mentioned?	Never	Once or twice	Monthly	Weekly	Daily or almost daily
a. Tobacco products					
b. Alcohol beverages					
c. Marijuana					

If **Never** to all items in question 2, skip to question 6. If any substance in question 2 was used in the past 3 months, continue with questions 3, 4, and 5 for each substance used.

QUESTION 3

During the past three months, how often have you had a strong desire to use substance?	Never	Once or twice	Monthly	Weekly	Daily or almost daily
a. Tobacco products					
b. Alcohol beverages					
c. Marijuana					

QUESTION 4

During the past three months, how often has your use of substance led to health, social, legal or financial problems?	Never	Once or twice	Monthly	Weekly	Daily or almost daily
a. Tobacco products					
b. Alcohol beverages					
c. Marijuana					

QUESTION 5

During the past three months, how often have you failed to do what was normally expected of you because of your use of substance?	Never	Once or twice	Monthly	Weekly	Daily or almost daily
a. Tobacco products					
b. Alcohol beverages					
c. Marijuana					

QUESTION 6

Has a friend or relative or anyone else ever expressed concern about your use of substance?	No, never	Yes, in the past 3 months	Yes, but not in the past 3 months
a. Tobacco products			
b. Alcoholic beverages			
c. Marijuana			

QUESTION 7

Have you ever tried and failed to control, cut down, or stop using substance?	No, never	Yes, in the past 3 months	Yes, but not in the past 3 months
a. Tobacco products			
b. Alcoholic beverages			
c. Marijuana			

QUESTION 8

Have you ever used any drug by injection (non-medical use only)	No, never	Yes, in the past 3 months	Yes, but not in the past 3 months

Responses for Questions 2-5

Never: Not used in the last 3 months
Once or twice: 1 or 2 times in the last 3 months
Monthly: 1 to 3 times in one month
Weekly: 1 to 4 times per week
Daily or almost daily: 5 to 7 days per week

ASSIST SCORING

SEVERITY

Substance	Low	Moderate	Severe
Tobacco products	0-3	4-26	27+
Alcohol beverages	0-10	11-26	27+
Marijuana	0-3	4-26	27+

APPENDIX F: MINI 6 ASSESSMENT TOOL

M.I.N.I.

MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW

English Version 6.0.0

DSM---IV

USA: **D. Sheehan[1], J. Janavs, K. Harnett---Sheehan, M. Sheehan, C. Gray.**
[1]University of South Florida College of Medicine--- Tampa, USA

EU: **Y. Lecrubier[2], E. Weiller, T. Hergueta, C. Allgulander, N. Kadri, D. Baldwin, C. Even.**
[2]Centre Hospitalier Sainte---Anne – Paris, France

DISCLAIMER

Our aim is to assist in the assessment and tracking of patients with greater efficiency and accuracy. Before action is taken on any data collected and processed by this program, it should be reviewed and interpreted by a licensed clinician.

This program is not designed or intended to be used in the place of a full medical and psychiatric evaluation by a qualified licensed physician – psychiatrist. It is intended only as a tool to facilitate accurate data collection and processing of symptoms elicited by trained personnel.

M.I.N.I. 6.0.0 (October 10, 2010) (10/10/10)

Patient Name:		***Patient Number:***	
Date of Birth:		***Time Interview Began:***	
Interviewer's Name:		***Time Interview Ended:***	
Date of Interview:		***Total Time:***	

	MODULES	TIME FRAME	MEETS CRITERIA	DSM---IV---TR		ICD---10	PRIMARY DIAGNOSIS
A	MAJOR DEPRESSIVE EPISODE	Current (2 weeks)	❒				
		Past	❒				
		Recurrent	❒				
	MAJOR DEPRESSIVE DISORDER	Current (2 weeks)	❒	296.20---296.26	Single	F32.x	❒
		Past	❒	296.20---296.26	Single	F32.x	❒
		Recurrent	❒	296.30---296.36	Recurrent	F33.x	❒
B	SUICIDALITY	Current (Past Month)	❒				
		❒ Low ❒ Moderate ❒ High					
C	MANIC EPISODE	Current	❒				
		Past	❒				
	HYPOMANIC EPISODE	Current	❒				
		Past	❒	❒ Not Explored			
	BIPOLAR I DISORDER	Current	❒	296.0x---296.6x		F30.x--- F31.9	❒
		Past	❒	296.0x---296.6x		F30.x--- F31.9	❒
	BIPOLAR II DISORDER	Current	❒	296.89		F31.8	❒
		Past	❒	296.89		F31.8	❒
	BIPOLAR DISORDER NOS	Current	❒	296.80		F31.9	❒
		Past	❒	296.80		F31.9	❒
D	PANIC DISORDER	Current (Past Month)	❒	300.01/300.21		F40.01---F41.0	❒
		Lifetime	❒	300.01/300.21		F40.01---F41.0	❒
E	AGORAPHOBIA	Current	❒	300.22		F40.00	❒
F	SOCIAL PHOBIA (Social Anxiety Disorder)	Current (Past Month)					
		Generalized	❒	300.23		F40.1	❒
		Non---Generalized	❒	300.23		F40.1	❒
G	OBSESSIVE---COMPULSIVE DISORDER	Current (Past Month)	❒	300.3		F42.8	❒
H	POSTTRAUMATIC STRESS DISORDER	Current (Past Month)	❒	309.81		F43.1	❒
I	ALCOHOL DEPENDENCE	Past 12 Months	❒	303.9		F10.2x	❒
	ALCOHOL ABUSE	Past 12 Months	❒	305.00		F10.1	❒
J	SUBSTANCE DEPENDENCE (Non---alcohol)	Past 12 Months	❒	304.00---.90/305.20---.90		F11.2x---F19.2x	❒
	SUBSTANCE ABUSE (Non---alcohol)	Past 12 Months	❒	304.00---.90/305.20---.90		F11.1---F19.1	❒
K	PSYCHOTIC DISORDERS	Lifetime	❒	295.10---295.90/297.1/		F20.xx---F29	❒
		Current	❒	297.3/293.81/293.82/ 293.89/298.8/298.9		F20.xx---F29	❒
	MOOD DISORDER WITH PSYCHOTIC FEATURES	Lifetime	❒	296.24/296.04---296.94		F30.2/F31.2/F31.5/ F31.65/F32.3/F33.3	❒
		Current	❒	296.24/296.04---296.94		F30.2/F31.2/F31.5/ F31.65/F32.3/F33.3	❒
L	ANOREXIA NERVOSA	Current (Past 3 Months)	❒	307.1		F50.0	❒
M	BULIMIA NERVOSA	Current (Past 3 Months)	❒	307.51		F50.2	❒
	ANOREXIA NERVOSA, BINGE EATING/PURGING TYPE	Current	❒	307.1		F50.0	❒
N	GENERALIZED ANXIETY DISORDER	Current (Past 6 Months)	❒	300.02		F41.1	❒
O	MEDICAL, ORGANIC, DRUG CAUSE RULED OUT		❒ No	❒ Yes ❒ Uncertain			
P	ANTISOCIAL PERSONALITY DISORDER	Lifetime	❒	301.7		F60.2	❒

IDENTIFY THE PRIMARY DIAGNOSIS BY CHECKING THE APPROPRIATE CHECK BOX.
(Which problem troubles you the most or dominates the others or came first in the natural history?)

The translation from DSM---IV---TR to ICD---10 coding is not always exact. For more information on this topic see Schulte---Markwort. Crosswalks ICD---10/DSM---IV---TR. Hogrefe & Huber Publishers 2006.

GENERAL INSTRUCTIONS

The M.I.N.I. was designed as a brief structured interview for the major Axis I psychiatric disorders in DSM---IV and ICD---10. Validation and reliability studies have been done comparing the M.I.N.I. to the SCID---P for DSM---III---R and the CIDI (a structured interview developed by the World Health Organization). The results ofthese studies show that the M.I.N.I. has similar reliability and validity properties, but can be administered in a much shorter period of time (mean 18.7 ± 11.6 minutes, median 15 minutes) than the above referenced instruments. It can be used by clinicians, after a brief training session. Lay interviewers require more extensive training.

INTERVIEW:
In order to keep the interview as brief as possible, inform the patient that you will conduct a clinical interview that is more structured than usual, with very precise questions about psychological problems which require a yes or no answer.

GENERAL FORMAT:
The M.I.N.I. is divided into **modules** identified by letters, each corresponding to a diagnostic category.
•At the beginning of each diagnostic module (except for psychotic disorders module), screening question(s) corresponding to the main criteria of the disorder are presented in a **gray box**.
•At the end of each module, diagnostic box(es) permit the clinician to indicate whether diagnostic criteria are met.

CONVENTIONS:
Sentences written in « normal font » should be read exactly as written to the patient in order to standardize the assessment of diagnostic criteria.

Sentences written in « CAPITALS » should not be read to the patient. They are instructions for the interviewer to assist in the scoring of the diagnostic algorithms.

Sentences written in « **bold** » indicate the time frame being investigated. The interviewer should read them as often as necessary. Only symptoms occurring during the time frameindicated should be considered in scoring the responses.

Answers with an arrow above them ( ) indicate that one of the criteria necessary for the diagnosis(es) is not met. In this case, the interviewer should go to the end of the module, circle «**NO** » in all the diagnostic boxes and move to the next module.

When terms are separated by a *slash (/)* the interviewer should read only those symptoms known to be present in the patient (for example, question G6).

Phrases in (parentheses) are clinical examples of the symptom. These may be read to the patient to clarify the question.

RATING INSTRUCTIONS:

All questions must be rated. The rating is done at the right of each question by circling either Yes or No. Clinical judgment by the rater should be used in coding the responses. Interviewers need to be sensitive to the diversity of cultural beliefs in their administration of questions and rating of responses. The rater should ask for examples when necessary, to ensure accurate coding. The patient should be encouraged to ask for clarification on any question that is not absolutely clear.
The clinician should be sure that each dimension of the question is taken into account by the patient (for example, time frame, frequency, severity, and/or alternatives).
Symptoms better accounted for by an organic cause or by the use of alcohol or drugs should not be coded positive in the M.I.N.I. The M.I.N.I. Plus has questions that investigate these issues.

For any questions, suggestions, need for a training session or information about updates of the M.I.N.I., please contact:

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tel : +33 (0) 1 53 80 49 41; fax : +33 (0) 1 45 65 88 54
e---mail: even---sainteanne@orange.fr

A. MAJOR DEPRESSIVE EPISODE

(MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE **NO** IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE**)**

A1	a	Were you ever depressed or down, most of the day, nearly every day, for two weeks?	NO	YES
		IF NO, CODE NO TO **A1b**: IF **YES** ASK:		
	b	For the past two weeks, were you depressed or down, most of the day, nearly every day?	NO	YES
A2	a	Were you ever much less interested in most things or muchless able to enjoy the things you used to enjoy most of the time, for two weeks?	NO	YES
		IF NO, CODE NO TO **A2b**: IF **YES** ASK:		
	b	In the past two weeks, were you much less interested in most things or much less able to enjoy the things you used to enjoy, most of the time?	NO	YES
		IS **A1a** OR **A2a** CODED **YES**?	NO	YES

A3 IF **A1b** OR **A2b** = **YES**: EXPLORE THE **CURRENT** AND THE MOST SYMPTOMATIC **PAST** EPISODE, OTHERWISE
IF **A1b** AND **A2b** = **NO**: EXPLORE ONLY THE MOST SYMPTOMATIC **PAST** EPISODE

Over that two week period, when you felt depressed or uninterested:

		Past 2 Weeks		Past Episode	
a	Was your appetite decreased or increased nearly every day? Did your weight decrease or increase without trying intentionally(i.e., by ±5% of body weight or ±8 lb or ± 3.5 kg, for a 160 lb/70 kg person in a month)? IF **YES** TO EITHER, CODE **YES**.	NO	YES	NO	YES
b	Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)?	NO	YES	NO	YES
c	Did you talk or move more slowly than normal or were you fidgety, restless or having trouble sitting still almost every day?	NO	YES	NO	YES
d	Did you feel tired or without energy almost every day?	NO	YES	NO	YES
e	Did you feel worthless or guiltyalmost every day?	NO	YES	NO	YES
	IF **YES**, ASK FOR EXAMPLES**.** THE EXAMPLES ARE CONSISTENT WITH A DELUSIONAL IDEA. Current Episode ❒ No ❒ Yes; Past Episode ❒ No ❒ Yes				
f	Did you have difficulty concentrating or making decisions almost every day?	NO	YES	NO	YES
g	Did you repeatedly consider hurting yourself, feel suicidal, or wish that you were dead? Did you attempt suicide or plan a suicide? IF **YES TO EITHER, CODE YES.**	NO	YES	NO	YES
A4	Did these symptoms cause significant problems at home, at work, socially, at school or in some other important way?	NO	YES	NO	YES

A5 In between 2 episodes of depression, did you ever have an interval of at least 2 months, without any significant depression or any significant loss of interest? NO YES

ARE **5** OR MORE ANSWERS (**A1---A3**) CODED **YES** AND IS **A4** CODED YES FOR THAT TIME FRAME?

SPECIFY IF THE EPISODE IS CURRENT AND / OR PAST.

IF **A5** IS CODED **YES,** CODE **YES** FOR RECURRENT.

NO	**YES**
MAJOR DEPRESSIVE EPISODE	
CURRENT	❒
PAST	❒
RECURRENT	❒

A6 a How many episodes of depression did you have in your lifetime? _____

Between each episode there must be at least 2 months without any significant depression .

B. SUICIDALITY

				Points
	In the past month did you:			
B1	Have any accident? This includes taking too much of your medication accidentally. IF NO TO B1, SKIP TO B2; IF YES, ASK B1a:	NO	YES	0
B1a	Plan or intend to hurt yourself in any accident either actively or passively (e.g. by not avoiding a risk)? IF NO TO B1a, SKIP TO B2: IF YES, ASK B1b:	NO	YES	0
B1b	Intend to die as a result of any accident?	NO	YES	0
B2	Feel hopeless?	NO	YES	1
B3	Think that you would be better off dead or wish you were dead?	NO	YES	1
B4	Think about hurting or injuring yourself or have mental images of harming yourself, with at least some intent or awareness that you might die as a result?	NO	YES	4
B5	Think about suicide (killing yourself)?	NO	YES	6

IF NO TO B5, SKIP TO B7. OTHERWISE ASK:

Frequency		Intensity	
Occasionally	❒	Mild	❒
Often	❒	Moderate	❒
Very often	❒	Severe	❒

B6	Have difficulty restraining yourself from acting on theseimpulses?	NO	YES	8
B7	Have a suicide method in mind (e.g. how)?	NO	YES	8
B8	Have a suicide plan in mind (e.g. when or where)?	NO	YES	8
B9	Intend to act on thoughts of killing yourself?	NO	YES	8
B10	Intend to die as a result of a suicidal act?	NO	YES	8
B11	Take any active steps to prepare to injure yourself or to prepare for a suicide attempt in which you expected or intended to die? This includes times when you were going to kill yourself, but were interrupted or stopped yourself, before harming yourself. IF NO TO B11, SKIP TO B12.	NO	YES	9
B11a	Take active steps to prepare to kill yourself, but you did not start the suicide attempt?	NO	YES	
B11b	Start a suicide attempt, but then **you stopped yourself** before harming yourself (aborted attempt)?	NO	YES	
B11c	Start a suicide attempt, but then **someone or something stopped you** before harming yourself (interrupted attempt)?	NO	YES	
B12	Injure yourself on purpose without intending to kill yourself?	NO	YES	4
B13	Attempt suicide (to kill yourself)?	NO	YES	10

A suicide attempt means you did something where you could possibly be injured,
with at least a slight intent to die.

IF NO, SKIP TO B14:

Hope to be rescued / survive ❒
Expected / intended to die ❒

In your lifetime:

B14 Did you ever make a suicide attempt (try to kill yourself)? NO YES 4

"A suicide attempt is any self injurious behavior, with at least some intent (> 0) to die as a result or if intent can be inferred, e.g. if it is clearly not an accident or the individual thinks the act could be lethal, even though denying intent."
(C---CASA definition). Posner K et al. Am J Psychiatry 164:7, July 2007.

IS AT LEAST **1** OF THE ABOVE (EXCEPT B1) CODED **YES**?

IF YES, ADD THE TOTAL POINTS FOR THE ANSWERS (B1---B14)
CHECKED 'YES' AND SPECIFY THE SUICIDALITY SCORE AS INDICATED IN THE DIAGNOSTIC BOX:

MAKE ANY ADDITIONAL COMMENTS ABOUT YOUR ASSESSMENT OF THIS PATIENT'S CURENT AND NEAR FUTURE SUICIDALITY IN THE SPACE BELOW:

NO **YES**

SUICIDALITY CURRENT

1---8 points Low ❒
9---16 points Moderate ❒
≥ 17 points High ❒

❒
❒

IF NO, SKIP TO B14:

Hope to be rescued / survive
Expected / intended to die

In your lifetime:

B14 Did you ever make a suicide attempt (try to kill yourself)? NO YES 4

"A suicide attempt is any self injurious behavior, with at least some intent (> 0) to die as a result or if intent can be inferred, e.g. if it is clearly not an accident or the individual thinks the act could be lethal, even though denying intent."
(C---CASA definition). Posner K et al. Am J Psychiatry 164:7, July 2007.

IS AT LEAST **1** OF THE ABOVE (EXCEPT B1) CODED **YES**?

IF YES, ADD THE TOTAL POINTS FOR THE ANSWERS (B1---B14)
CHECKED 'YES' AND SPECIFY THE SUICIDALITY SCORE AS INDICATED IN THE DIAGNOSTIC BOX:

MAKE ANY ADDITIONAL COMMENTS ABOUT YOUR ASSESSMENT OF THIS PATIENT'S CURENT AND NEAR FUTURE SUICIDALITY IN THE SPACE BELOW:

NO **YES**

SUICIDALITY CURRENT

1---8 points Low ❒
9---16 points Moderate ❒
≥ 17 points High ❒

C. MANIC AND HYPOMANIC EPISODES

(MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN MANIC AND HYPOMANIC DIAGNOSTIC BOXES, AND MOVE TO NEXT MODULE)

Do you have any family historyof manic---depressive illness or bipolar disorder, or any family member who had mood swings treated with a medication like lithium, sodium valproate (Depakote) or lamotrigine (Lamictal)? NO YES

THIS QUESTION IS NOT A CRITERION FOR BIPOLAR DISORDER, BUT IS ASKED TO INCREASE THE CLINICIAN'S VIGILANCE ABOUT THE RISK FOR BIPOLAR DISORDER.

IF YES, PLEASE SPECIFY WHO:_____

C1 a Have you **ever** had a period of time when you were feeling 'up' or 'high' or 'hyper' or so full of energy or full of yourself that you got into trouble,--- or that other people thought you were not your usual self? (Do not consider times when you were intoxicated on drugs or alcohol.) NO YES

IF PATIENT IS PUZZLED OR UNCLEAR ABOUT WHAT YOU MEAN BY 'UP' OR 'HIGH' OR 'HYPER', CLARIFY AS FOLLOWS: By 'up' or 'high' or 'hyper' I mean: having elated mood; increased energy; needing less sleep; having rapid thoughts; being full of ideas; having an increase in productivity, motivation, creativity, or impulsive behavior; phoning or working excessively or spending more money.

IF NO, CODE NO TO **C1b**: IF **YES** ASK:

b Are you currently feeling 'up' or 'high' or 'hyper' or full of energy? NO YES

C2 a Have you **ever** been persistently irritable, for several days, so that you had arguments or verbal or physical fights, or shouted at people outside your family? Have you or others noticed that you have been more irritable or over reacted, compared to other people, even in situations that you felt were justified? NO YES

IF NO, CODE NO TO **C2b**: IF **YES** ASK:

b Are you currently feeling persistently irritable? NO YES

IS **C1a** OR **C2a** CODED **YES**? NO YES

C3 IF **C1b** OR **C2b** = **YES**: EXPLORE THE **CURRENT** AND THE MOST SYMPTOMATIC **PAST** EPISODE, OTHERWISE IF **C1b** AND **C2b** = **NO**: EXPLORE ONLY THE MOST SYMPTOMATIC **PAST** EPISODE

During the times when you felt high, full of energy, or irritable did you:

		Current Episode	Past Episode
a	Feel that you could do things others couldn't do, or that you were an especially important person? IF **YES**, ASK FOR EXAMPLES. THE EXAMPLES ARE CONSISTENT WITH A DELUSIONAL IDEA. Current Episode ❒ No ❒ Yes; Past Episode ❒ No ❒ Yes	NO YES	NO YES
b	Need less sleep (for example, feel rested after only a few hours sleep)?	NO YES	NO YES
c	Talk too much without stopping, or so fast that people had difficulty understanding?	NO YES	NO YES
d	Have racing thoughts?	NO YES	NO YES

		Current Episode		Past Episode	
e	Become easily distracted so that any little interruption could distract you?	NO	YES	NO	YES
f	Have a significant increase in your activity or drive, at work, at school, socially or sexually or did you become physically or mentally restless?	NO	YES	NO	YES
g	Want so much to engage in pleasurable activities that you ignored the risks or consequences (for example, spending sprees, reckless driving, or sexual indiscretions)?	NO	YES	NO	YES
C3	SUMMARY: WHEN RATING CURRENT EPISODE: IF C1b IS NO, ARE 4 OR MORE C3 ANSWERS CODED YES? IF C1b IS YES, ARE 3 OR MORE C3 ANSWERS CODED YES? WHEN RATING PAST EPISODE: IF C1a IS NO, ARE 4 OR MORE C3 ANSWERS CODED YES? IF C1a IS YES, ARE 3 OR MORE C3 ANSWERS CODED YES? CODE YES ONLY IF THE ABOVE 3 OR 4 SYMPTOMS OCCURRED DURING THE SAME TIME PERIOD. RULE: ELATION/EXPANSIVENESS REQUIRES ONLY THREE C3 SYMPTOMS, WHILE IRRITABLE MOOD ALONE REQUIRES 4 OF THE C3 SYMPTOMS.	NO	YES	NO	YES
C4	What is the longest time these symptoms lasted?				
	a) 3 days or less		❒		❒
	b) 4 to 6 days		❒		❒
	c) 7 days or more		❒		❒
C5	Were you hospitalized for these problems? IF YES, CIRCLE YES IN MANIC EPISODE FOR THAT TIME FRAME AND GO TO C7.	NO	YES	NO	YES
C6	Did these symptoms cause significant problems at home, at work, socially in your relationships with others, at school or in some other important way?	NO	YES	NO	YES

ARE **C3** SUMMARY AND **C5** AND **C6** CODED **YES**?

OR

ARE **C3** SUMMARY AND **C4c** AND **C6** CODED **YES** AND IS **C5** CODED **NO**?

SPECIFY IF THE EPISODE IS CURRENT AND / OR PAST.

NO	**YES**
MANIC EPISODE	
CURRENT	❒
PAST	❒

Is C3 SUMMARY **CODED YES** AND ARE **C5** AND **C6** CODED **NO** AND IS EITHER **C4b** OR **C4c** CODED **YES**?

OR

ARE **C3** SUMMARY AND **C4b** AND **C6** CODED **YES** AND IS **C5** CODED **NO?**

SPECIFY IF THE EPISODE IS CURRENT AND / OR PAST.

IF **YES** TO CURRENT MANIC EPISODE, THEN CODE CURRENT HYPOMANIC EPISODE AS **NO.**

IF **YES** TO PAST MANIC EPISODE, THEN CODE PAST HYPOMANIC EPISODE AS **NOT EXPLORED.**

HYPOMANIC EPISODE

CURRENT ❒ **NO**
❒ **YES**

PAST ❒ **NO**
❒ **YES**
❒ **NOT EXPLORED**

ARE **C3** SUMMARY AND **C4a** CODED **YES** AND IS **C5** CODED **NO**?

SPECIFY IF THE EPISODE IS CURRENT AND / OR PAST.

IF **YES** TO CURRENT MANIC EPISODE OR HYPOMANIC EPISODE, THEN CODE CURRENT HYPOMANIC SYMPTOMS AS **NO.**

PAST
IF **YES** TO PAST MANIC EPISODE OR YES TO PAST HYPOMANIC EPISODE, THEN CODE PAST HYPOMANIC SYMPTOMS AS **NOT EXPLORED.**

HYPOMANIC SYMPTOMS

CURRENT ❒ **NO**
❒ **YES**

❒ **NO**
❒ **YES**

❒ **NOT EXPLORED**

C7 a) IF MANIC EPISODE IS POSITIVE FOR EITHER CURRENT OR PAST ASK:
Did you have 2 or more of these (manic) episodes lasting 7 days or more **C4c**() in your lifetime (including the current episode if present)? NO YES

b) IF MANIC OR HYPOMANIC EPISODE IS POSITIVE FOR EITHER CURRENT OR PAST ASK:
Did you have 2 or more of these (hypomanic)episodes lasting just 4 to 6 days (**C4b**) in your lifetime (including the current episode)? NO YES

c) IF THE PAST "HYPOMANIC SYMPTOMS" CATEGORY IS CODED POSITIVE ASK:
Did you have these hypomanic symptoms lasting only 1 to 3 days (**C4a**) 2 or more times in your lifetime, (including the current episode if present)? NO YES

D. PANIC DISORDER

(MEANS : CIRCLE NO IN D5, D6 AND D7 AND SKIP TO E1)

D1 a	Have you, on more than one occasion, had spells or attacks when you **suddenly** felt anxious, frightened, uncomfortable or uneasy, even in situations where most people would not feel that way?	NO	YES
b	Did the spells surge to a peak within 10 minutes of starting?	NO	YES
D2	At any time in the past, did any of those spells or attacks come on unexpectedly or occur in an unpredictable or unprovoked manner?	NO	YES
D3	Have you ever had one such attack followed by a month or more of persistent concern about having another attack, or worries about the consequences of the attack--- or did you make a significant change in your behavior because of the attacks (e.g., shopping only with a companion, not wanting to leave your house, visiting the emergency room repeatedly, or seeing your doctor more frequently because of the symptoms)?	NO	YES
D4	**During the worst attack that you can remember:**		
a	Did you have skipping, racing or pounding of your heart?	NO	YES
b	Did you have sweating or clammy hands?	NO	YES
c	Were you trembling or shaking?	NO	YES
d	Did you have shortness of breath or difficulty breathing?	NO	YES
e	Did you have a choking sensation or a lump in your throat?	NO	YES
f	Did you have chest pain, pressure or discomfort?	NO	YES
g	Did you have nausea, stomach problems or sudden diarrhea?	NO	YES
h	Did you feel dizzy, unsteady, lightheaded or faint?	NO	YES
i	Did things around you feel strange, unreal, detached or unfamiliar, or did you feel outside of or detached from part or all of your body?	NO	YES
j	Did you fear that you were losing control or going crazy?	NO	YES
k	Did you fear that you were dying?	NO	YES
l	Did you have tingling or numbness in parts of your body?	NO	YES
m	Did you have hot flushes or chills?	NO	YES
D5	ARE BOTH **D3,** AND **4** OR MORE **D4** ANSWERS, CODED **YES**? IF YES TO D5, SKIP TO D7.	NO	YES ***PANIC DISORDER LIFETIME***
D6	IF **D5** = **NO,** ARE ANY D4 ANSWERS CODED **YES**? THEN SKIP TO **E1.**	NO	YES ***LIMITED SYMPTOM ATTACKS LIFETIME***

D7 In the past month, did you have such attacks repeatedly (2 or more), and did you have persistent concern about having another attack, or worry about the consequences of the attacks, or did you change your behavior in any way because of the atacks? NO YES

PANIC DISORDER CURRENT

E. AGORAPHOBIA

E1 Do you feel anxious or uneasy in places or situations where help might not be available or escape might be difficult, like being in a crowd, standing in a line (queue), when you are alone away from home or alone at home, or when crossing a bridge, or traveling in a bus, train or car or where you might have a panic attack or the panic---like symptoms we just spoke about? NO YES

IF **E1** = **NO**, CIRCLE **NO** IN **E2**.

E2 Do you fear these situations so much that youavoid them, or suffer through them, or need a companion to face them? NO YES

AGORAPHOBIA CURRENT

IS **E2** (CURRENT AGORAPHOBIA) CODED **YES**

And

IS **D7** (CURRENT PANIC DISORDER) CODED **YES**?

NO YES

PANIC DISORDER with Agoraphobia CURRENT

IS **E2** (CURRENT AGORAPHOBIA) CODED **NO**

And

IS **D7** (CURRENT PANIC DISORDER) CODED **YES**?

NO YES

PANIC DISORDER without Agoraphobia CURRENT

IS **E2** (CURRENT AGORAPHOBIA) CODED **YES**

And

IS **D5** (PANIC DISORDER LIFETIME) CODED **NO**?

NO YES

AGORAPHOBIA, CURRENT without history of Panic Disorder

F. SOCIAL PHOBIA (Social Anxiety Disorder)

(MEANS : GO TO THE DIAGNOSTIC BOX, CIRCLE NO AND MOVE TO THE NEXT MODULE)

F1 In the past month, did you have persistent fear and significant anxiety at being watched, being the focus of attention, or of being humiliated or embarrassed? This includes things like speaking in public, eating in public or with others, writing while someone watches, or being in social situations. NO YES

F2 Is this social fear excessive or unreasonable and does it almost always make you anxious? NO YES

F3 Do you fear these social situations so much that you avoid them or suffer through them most of the time? NO YES

F4 Do these social fears disrupt your normal work, school or social functioning or cause you significant distress?

SUBTYPES

Do you fear and avoid 4 or more social situations?

If YES Generalized social phobia (social anxiety disorder)

If NO Non---generalized social phobia (social anxiety disorder)

EXAMPLES OF SUCH SOCIAL SITUATIONS TYPICALLY INCLUDE

- ☐ INITIATING OR MAINTAINING A CONVERSATION,
- ☐ PARTICIPATING IN SMALL GROUPS,
- ☐ DATING,
- ☐ SPEAKING TO AUTHORITY FIGURES,
- ☐ ATTENDING PARTIES,
- ☐ PUBLIC SPEAKING,
- ☐ EATING IN FRONT OF OTHERS,
- ☐ URINATING IN A PUBLIC WASHROOM, ETC.

NOTE TO INTERVIEWER: PLEASE ASSESS WHETHER THE SUBJECT'S FEARS ARE RESTRICTED TO NON--- GENERALIZED ("ONLY 1 OR SEVERAL") SOCIAL SITUATIONS OR EXTEND TO GENERALIZED ("MOST") SOCIAL SITUATIONS. "MOST" SOCIAL SITUATIONS IS USUALLY OPERATIONALIZED TO MEAN 4 OR MORE SOCIAL SITUATIONS, ALTHOUGH THE DSM---IV DOES NOT EXPLICITLY STATE THIS.

NO **YES**

SOCIAL PHOBIA
(Social Anxiety Disorder)
CURRENT

GENERALIZED ❒

NON---GENERALIZED ❒

G. OBSESSIVE---COMPULSIVE DISORDER

(**MEANS: GO TO THE DIAGNOSTIC BOX, CIRCLE NO AND MOVE TO THE NEXT MODULE)**

G1	In the past month, have you been bothered by recurrent thoughts, impulses, or images that were unwanted, distasteful, inappropriate, intrusive, or distressing? --- (For example, the idea that you were dirty, contaminated or had germs,**or** fear of contaminating others, **or** fear of harming someone even though it disturbs or distresses you, or fear you would act on some impulse,**or** fear or superstitions that you would be responsible for things going wrong, **or** obsessions with sexual thoughts, images or impulses, **or** hoarding, collecting, **or** religious obsessions.) (DO NOT INCLUDE SIMPLY EXCESSIVE WORRIES ABOUT REAL LIFE PROBLEMS. DO NOT INCLUDE OBSESSIONS DIRECTLY RELATED TO EATING DISORDERS, SEXUAL DEVIATIONS, PATHOLOGICAL GAMBLING, OR ALCOHOL OR DRUG ABUSE BECAUSE THE PATIENT MAY DERIVE PLEASURE FROM THE ACTIVITY AND MAY WANT TO RESIST IT ONLY BECAUSE OF ITS NEGATIVE CONSEQUENCES.)	NO ↓ SKIP TO **G4**	YES
G2	Did they keep coming back into your mind even when you tried to ignore or get rid of them?	NO ↓ SKIP TO **G4**	YES
G3	Do you think that these obsessions are the product of your own mind and that they are not imposed from the outside?	NO	YES **obsessions**
G4	In the past month, did you do something repeatedly without being able to resist doing it, like washing or cleaning excessively, counting or checking things over and over, or repeating, collecting, arranging things, or other superstitious rituals?	NO	YES **compulsions**

IS **G3** OR **G4** CODED **YES**? NO YES

G5 At any point, did you recognize that either these obsessive thoughts or these compulsive behaviors were excessive or unreasonable? NO YES

G6 In the past month, did these obsessive thoughts and/or compulsive behaviors significantly interfere with your normal routine, your work or school, your usual social activities, or relationships, or did they take more than one hour a day?

NO **YES**

O.C.D. CURRENT

H. POSTTRAUMATIC STRESS DISORDER

(MEANS : GO TO THE DIAGNOSTIC BOX, CIRCLE NO, AND MOVE TO THE NEXT MODULE)

H1	Have you ever experienced or witnessed or had to deal with an extremely traumatic event that included actual or threatened death or serious injury to you or someone else? EXAMPLES OF TRAUMATIC EVENTS INCLUDE: SERIOUS ACCIDENTS, SEXUAL OR PHYSICAL ASSAULT, A TERRORIST ATTACK, BEING HELD HOSTAGE, KIDNAPPING, FIRE, DISCOVERING A BODY, WAR, OR NATURAL DISASTER, WITNESSING THE VIOLENT OR SUDDEN DEATH OF SOMEONE CLOSE TO YOU, OR A LIFE THREATENING ILLNESS.	NO	YES
H2	Did you respond with intense fear, helplessness or horror?	NO	YES
H3	During the past month, have you re---experienced the event in a distressing way (such as in dreams, intense recollections, flashbacks or physical reactions) or didyou have intense distress when you were reminded about the event or exposed to a similar event?	NO	YES

H4	**In the past month:**		
a	Have you avoided thinking about or talking about the event ?	NO	YES
b	Have you avoided activities, places or people that remind you of the event?	NO	YES
c	Have you had trouble recalling some important part of what happened?	NO	YES
d	Have you become much less interested in hobbies or social activities?	NO	YES
e	Have you felt detached or estranged from others?	NO	YES
f	Have you noticed that your feelings are numbed?	NO	YES
g	Have you felt that your life will be shortened or that you will die sooner than other people?	NO	YES
	ARE **3** OR MORE **H4** ANSWERS CODED **YES**?	NO	YES
H5	**In the past month:**		
a	Have you had difficulty sleeping?	NO	YES
b	Were you especially irritable or did you have outbursts of anger?	NO	YES
c	Have you had difficulty concentrating?	NO	YES
d	Were you nervous or constantly on your guard?	NO	YES
e	Were you easily startled?	NO	YES
	ARE **2** OR MORE **H5** ANSWERS CODED **YES**?	NO	YES

H6 During the past month, have these problems significantly interfered with your work, school or social activities, or caused significant distress?

NO	YES
POSTTRAUMATIC STRESS DISORDER CURRENT	

I. ALCOHOL DEPENDENCE / ABUSE

(MEANS: GO TO DIAGNOSTIC BOXES, CIRCLE **NO** IN BOTH AND MOVE TO THE NEXT MODULE)

I1	**In the past 12 months**, have you had 3 or more alcoholic drinks, --- within a 3 hour period, --- on 3 or more occasions?	NO	YES

I2 **In the past 12 months**:

a	Did you need to drink a lot more in order to get the same effect that you got when you first started drinking or did you get much less effect with continued use of the same amount?	NO	YES
b	When you cut down on drinking did your hands shake, did you sweat or feel agitated? Did you drink to avoid these symptoms (for example, "the shakes", sweating or agitation) or to avoid being hungover? IF **YES** TO ANY, CODE **YES**.	NO	YES
c	During the times when you drank alcohol, did you end up drinking more than you planned when you started?	NO	YES
d	Have you tried to reduce or stop drinking alcohol but failed?	NO	YES
e	On the days that you drank, did you spend substantial timeobtaining alcohol, drinking, or recovering from the effects of alcohol?	NO	YES
f	Did you spend less time working, enjoying hobbies, or being with others because of your drinking?	NO	YES
g	If your drinking caused you health or mental problems, did you still keep on drinking?	NO	YES

ARE **3** OR MORE **I2** ANSWERS CODED **YES**?

NO **YES***

* IF YES, SKIP I3 QUESTIONS AND GO TO NEXT MODULE. "DEPENDENCE PREEMPTS ABUSE" IN DSM IV TR.

ALCOHOL DEPENDENCE
CURRENT

I3 **In the past 12 months:**

a	Have you been intoxicated, high, or hungover more than once when you had other responsibilities at school, at work, or at home? Did this cause any problems? (CODE **YES** ONLY IF THIS CAUSED PROBLEMS.)	NO	YES
b	Were you intoxicated more than once in any situation where you were physically at risk, for example, driving a car, riding a motorbike, using machinery, boating, etc.?	NO	YES
c	Did you have legal problems more than once because of your drinking, for example, an arrest or disorderly conduct?	NO	YES
d	If your drinking caused problems with your family or other people, did you still keep on drinking?	NO	YES

ARE **1** OR MORE **I3** ANSWERS CODED **YES**?

NO YES

ALCOHOL ABUSE

CURRENT

J. SUBSTANCE DEPENDENCE / ABUSE (NON---ALCOHOL)

(MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)

Now I am going to show you / read to you a list of street drugs or medicines.

J1 a **In the past 12 months**, did you take any of these drugs more than once, to get high, to feel elated, to get "a buzz" orto change your mood? NO YES

CIRCLE EACH DRUG TAKEN:

Stimulants: amphetamines, "speed", crystal meth, "crank", Dexedrine, Ritalin, diet pills.

Cocaine: snorting, IV, freebase, crack, "speedball".

Narcotics: heroin, morphine, Dilaudid, opium, Demerol, methadone, Darvon, codeine, Percodan, Vicodin, OxyContin.

Hallucinogens: LSD ("acid"), mescaline, peyote, psilocybin, STP, "mushrooms", "ecstasy", MDA, MDMA.

Dissociative Drugs: PCP (Phencyclidine ,"Angel Dust", "Peace Pill", "Tranq", "Hog"), or ketamine ("Special K").

Inhalants: "glue", ethyl chloride, "rush", nitrous oxide ("laughing gas"), amyl or butyl nitrate ("poppers").

Cannabis: marijuana, hashish ("hash"), THC, "pot", "grass", "weed", "reefer".

Tranquilizers: Quaalude, Seconal ("reds"), Valium, Xanax, Librium, Ativan, Dalmane, Halcion, barbiturates, Miltown, GHB, Roofinol, "Roofies".

Miscellaneous: steroids, nonprescription sleep or diet pills. Cough Medicine? Any others?

SPECIFY THE MOST USED DRUG(S): _____

WHICH DRUG(S) CAUSE THE BIGGEST PROBLEMS?: _____

FIRST EXPLORE THE DRUG CAUSING THE BIGGEST PROBLEMS AND MOST LIKELY TO MEET DEPENDENCE / ABUSE CRITERIA.

IF MEETS CRITERIA FOR ABUSE OR DEPENDENCE, SKIP TO THE NEXT MODULE. OTHERWISE, EXPLORE THE NEXT MOST PROBLEMATIC DRUG.

J2 **Considering your use of (NAME OF DRUG / DRUG CLASS SELECTED), in the past 12 months:**

a Have you found that you needed to use much more (NAME OF DRUG / DRUG CLASS SELECTED) to get the same effect that you did when you first started taking it? NO YES

b When you reduced or stopped using (NAME OF DRUG / DRUG CLASS SELECTED), did you have withdrawal symptoms (aches, shaking, fever, weakness, diarrhea, nausea, sweating, heart pounding, difficulty sleeping, or feeling agitated, anxious, irritable, or depressed)? Did you use any drug(s) to keep yourself from getting sick (withdrawal symptoms) or so that you would feel better? NO YES

IF **YES** TO EITHER, CODE **YES**.

c Have you often found that when you used(NAME OF DRUG / DRUG CLASS SELECTED), you ended up taking more than you thought you would? NO YES

d Have you tried to reduce or stop taking (NAME OF DRUG / DRUG CLASS SELECTED) but failed? NO YES

e On the days that you used (NAME OF DRUG / DRUG CLASS SELECTED), did you spend substantial time (>2 HOURS), obtaining, using or recovering from the drug, or thinking about the drug? NO YES

f Did you spend less time working, enjoying hobbies, or being with family or friends because of your drug use? NO YES

g If (NAME OF DRUG / DRUG CLASS SELECTED) caused you health or mental problems, did you still keep on using it? NO YES

ARE **3** OR MORE **J2** ANSWERS CODED **YES**?

SPECIFY DRUG(S): _____

NO **YES** *

SUBSTANCE DEPENDENCE
CURRENT

* IF YES, SKIP J3 QUESTIONS, MOVE TO NEXT DISORDER.
"DEPENDENCE PREEMPTS ABUSE" IN DSM IV TR.

Considering your use of (NAME THE DRUG CLASS SELECTED), in the past 12 months:

J3 a Have you been intoxicated, high, or hungover from (NAME OF DRUG / DRUG CLASS SELECTED) more than once, when you had other responsibilities at school, at work, or at home? Did this cause any problem? NO YES

(CODE **YES** ONLY IF THIS CAUSED PROBLEMS.)

b Have you been high or intoxicated from (NAME OF DRUG / DRUG CLASS SELECTED) more than once in any situation where you were physically at risk (for example, driving a car, riding a motorbike, using machinery, boating, etc.)? NO YES

c Did you have legal problems more than once because of your drug use, for example, an arrest or disorderly conduct? NO YES

d If (NAME OF DRUG / DRUG CLASS SELECTED) caused problems with your family or other people, did you still keep on using it? NO YES

ARE **1** OR MORE **J3** ANSWERS CODED **YES**?

SPECIFY DRUG(S): _____

NO **YES**

SUBSTANCE ABUSE
CURRENT

K. PSYCHOTIC DISORDERS AND MOOD DISORDER WITH PSYCHOTIC FEATURES

ASK FOR AN EXAMPLE OF EACH QUESTION ANSWERED POSITIVELY. CODE **YES** ONLY IF THE EXAMPLES CLEARLY SHOW A DISTORTION OF THOUGHT OR OF PERCEPTION OR IF THEY ARE NOT CULTURALLY APPROPRIATE. BEFORE CODING, INVESTIGATE WHETHER DELUSIONS QUALIFY AS "BIZARRE".

DELUSIONS ARE "BIZARRE" IF: CLEARLY IMPLAUSIBLE, ABSURD, NOT UNDERSTANDABLE, AND CANNOT DERIVE FROM ORDINARY LIFE EXPERIENCE.
HALLUCINATIONS ARE SCORED "BIZARRE" IF: A VOICE COMMENTS ON THE PERSON'S THOUGHTS OR BEHAVIOR, OR WHEN TWO OR MORE VOICES ARE CONVERSING WITH EACH OTHER.
THE PURPOSE OF THIS MODULE IS TO EXCLUDE PATIENTS WITH PSYCHOTIC DISORDERS. THIS MODULE NEEDS EXPERIENCE.

					BIZARRE
		Now I am going to ask you about unusual experiences that some people have.			
K1	a	Have you ever believed that people were spying on you, or that someone was plotting against you, or trying to hurt you? **NOTE**: ASK FOR EXAMPLES TO RULE OUT ACTUAL STALKING.	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES ↳ **K6**
K2	a	Have you ever believed that someone was reading your mind or could hear your thoughts, or that you could actually read someone's mind or hear what another person was thinking?	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES ↳ **K6**
K3	a	Have you ever believed that someone orsome force outside of yourself put thoughts in your mind that were not your own, or made you act in a way that was not your usual self? Have you ever felt that you were possessed? CLINICIAN: ASK FOR EXAMPLES AND DISCOUNT ANY THAT ARE NOT PSYCHOTIC.	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES ↳ **K6**
K4	a	Have you ever believed that you were being sent special messages through the TV, radio, internet, newspapers, books, or magazines or that a person you did not personally know was particularly interested in you?	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES ↳ **K6**
K5	a	Have your relatives or friends ever considered any of your beliefs odd or unusual? INTERVIEWER: ASK FOR EXAMPLES. ONLY CODE YES IF THE EXAMPLES ARE CLEARLY DELUSIONAL IDEAS NOT EXPLORED IN QUESTIONS K1 TO K4, FOR EXAMPLE, SOMATIC OR RELIGIOUS DELUSIONS OR DELUSIONS OF GRANDIOSITY, JEALOUSY, GUILT, RUIN, OR DESTITUTION, ETC.	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do they currently consider your beliefs strange?	NO	YES	YES
K6	a	Have you ever heard things other people couldn't hear, such asvoices?	NO	YES	
		IF YES TO VOICE HALLUCINATION: Was the voice commenting on your thoughts or behavior or did you hear two or more voices talking to each other?	NO		YES
	b	**IF YES OR YES BIZARRE TO K6a:** have you heard sounds / voices in the past month?	NO	YES	
		IF YES TO VOICE HALLUCINATION: Was the voice commenting on your thoughts or behavior or did you hear two or more voices talking to each other?	NO		YES ↳ **K8b**

K7 a Have you ever had visions when you were awake or have you ever seen things other people couldn't see? NO YES

CLINICIAN: CHECK TO SEE IF THESE ARE CULTURALLY INAPPROPRIATE.

b **IF YES:** have you seen these things in the past month? NO YES

CLINICIAN'S JUDGMENT

K8 b IS THE PATIENT CURRENTLY EXHIBITING INCOHERENCE, DISORGANIZED SPEECH, OR MARKED LOOSENING OF ASSOCIATIONS? NO YES

K9 b IS THE PATIENT CURRENTLY EXHIBITING DISORGANIZED OR CATATONIC BEHAVIOR? NO YES

K10 b ARE NEGATIVE SYMPTOMS OF SCHIZOPHRENIA, E.G. SIGNIFICANT AFFECTIVE FLATTENING, POVERTY OF SPEECH (ALOGIA) OR AN INABILITY TO INITIATE OR PERSIST IN GOAL---DIRECTED ACTIVITIES (AVOLITION), PROMINENT DURING THE INTERVIEW? NO YES

K11 a ARE 1 OR MORE « a » QUESTIONS FROM K1a TO K7a CODED **YES OR YES BIZARRE** AND IS EITHER:

MAJOR DEPRESSIVE EPISODE, (CURRENT, RECURRENT OR PAST)
OR
MANIC OR HYPOMANIC EPISODE, (CURRENT OR PAST) CODED **YES**? NO YES

IF NO TO K11 a, CIRCLE NO IN BOTH 'MOOD DISORDER WITH PSYCHOTIC FEATURES' DIAGNOSTIC BOXES AND MOVE TO K13. → **K13**

b You told me earlier that you had period(s) when you felt (depressed/high/persistently irritable).

Were the beliefs and experiences you just described(SYMPTOMS CODED **YES** FROM **K1**a TO **K7**a) restricted exclusively to times when you were feeling depressed/high/irritable?

IF THE PATIENT EVER HAD A PERIOD OF AT LEAST 2 WEEKS OF HAVING THESE BELIEFS OR EXPERIENCES (PSYCHOTIC SYMPTOMS) WHEN THEY WERE NOT DEPRESSED/HIGH/IRRITABLE, CODE NO TO THIS DISORDER.

IF THE ANSWER IS NO TO THIS DISORDER, ALSO CIRCLE NO TO K12 AND MOVE TO K13

NO **YES**

MOOD DISORDER WITH *PSYCHOTIC FEATURES*

LIFETIME

K12 a ARE 1 OR MORE « b » QUESTIONS FROM K1b TO K7b CODED **YES OR YES BIZARRE** AND IS EITHER:

MAJOR DEPRESSIVE EPISODE, (CURRENT)
OR
MANIC OR HYPOMANIC EPISODE, (CURRENT) CODED **YES**?

IF THE ANSWER IS YES TO THIS DISORDER (LIFETIME OR CURRENT), CIRCLE NO TO K13 AND K14 AND MOVE TO THE NEXT MODULE.

NO **YES**

MOOD DISORDER WITH *PSYCHOTIC FEATURES*

CURRENT

K13 ARE 1 OR MORE « b » QUESTIONS FROM K1b TO K6b, CODED **YES BIZARRE**?

OR

ARE 2 OR MORE « b » QUESTIONS FROM K1b TO K10b, CODED **YES** (RATHER THAN **YES BIZARRE**)?

AND DID AT LEAST TWO OF THE PSYCHOTIC SYMPTOMS OCCUR DURING THE SAME 1 MONTH PERIOD?

NO YES

PSYCHOTIC DISORDER
CURRENT

K14 IS **K13** CODED **YES**

OR

ARE 1 OR MORE « a » QUESTIONS FROM K1a TO K6a, CODED **YES BIZARRE**?

OR

ARE 2 OR MORE « a » QUESTIONS FROM K1a TO K7a, CODED **YES** (RATHER THAN **YES BIZARRE**)

AND DID AT LEAST TWO OF THE PSYCHOTIC SYMPTOMS OCCUR DURING THE SAME 1 MONTH PERIOD?

NO YES

PSYCHOTIC DISORDER
LIFETIME

L. ANOREXIA NERVOSA

(MEANS : GO TO THE DIAGNOSTIC BOX, CIRCLE NO, AND MOVE TO THE NEXT MODULE)

L1	a	How tall are you?	❑ ft ❑ ❑ in. ❑ ❑ ❑ cm
	b.	What was your lowest weight in the past 3 months?	❑ ❑ ❑ lb ❑ ❑ ❑ kg
	c	IS PATIENT'S WEIGHT EQUAL TO OR BELOW THE THRESHOLD CORRESPONDING TO HIS / HER HEIGHT? (SEE TABLE BELOW)	NO YES

In the past 3 months:

L2		In spite of this low weight, have you tried not to gain weight?	NO YES
L3		Have you intensely feared gaining weight or becoming fat, even though you were underweight?	NO YES
L4	a	Have you considered yourself too big / fat or that part of your body was too big / fat?	NO YES
	b	Has your body weight or shape greatly influenced how you felt about yourself?	NO YES
	c	Have you thought that your current low body weight was normal or excessive?	NO YES
L5		ARE 1 OR MORE ITEMS FROM **L4** CODED **YES**?	NO YES
L6		FOR WOMEN ONLY: During the last 3 months, did you miss all your menstrual periods when they were expected to occur (when you were not pregnant)?	NO YES

FOR WOMEN: ARE **L5 AND L6** CODED **YES**?

FOR MEN: IS **L5** CODED **YES**?

NO YES

ANOREXIA NERVOSA
CURRENT

HEIGHT / WEIGHT TABLE CORRESPONDING TO A BMI THRESHOLD OF 17.5 KG/M^2

Height/Weight														
ft/in	4'9	4'10	4'11	5'0	5'1	5'2	5'3	5'4	5'5	5'6	5'7	5'8	5'9	5'10
lb	81	84	87	89	92	96	99	102	105	108	112	115	118	122
cm	145	147	150	152	155	158	160	163	165	168	170	173	175	178
kg	37	38	39	41	42	43	45	46	48	49	51	52	54	55

Height/Weight					
ft/in	5'11	6'0	6'1	6'2	6'3
lb	125	129	132	136	140
cm	180	183	185	188	191
kg	57	59	60	62	64

The weight thresholds above are calculated using a body mass index (BMI) equal to or below 17.5 kg/m for the patient's height. This is the threshold guideline below which a person is deemed underweight by the DSM---IV and the ICD---10 Diagnostic Criteria for Research for Anorexia Nervosa.

M. BULIMIA NERVOSA

(MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)

M1	In the past three months, did you have eating binges or times when you ate a very large amount of food within a 2---hour period?	NO	YES
M2	In the last 3 months, did you have eating binges as often as twice a week?	NO	YES
M3	During these binges, did you feel that your eating was out of control?	NO	YES
M4	Did you do anything to compensate for, or to prevent a weight gain fromthese binges, like vomiting, fasting, exercising or taking laxatives, enemas, diuretics (fluid pills), or other medications?	NO	YES
M5	Does your body weight or shape greatly influence how you feel about yourself?	NO	YES
M6	DO THE PATIENT'S SYMPTOMS MEET CRITERIA FOR ANOREXIA NERVOSA?	NO ↓ Skip to M8	YES
M7	Do these binges occur only when you are under (____lb/kg)? INTERVIEWER: WRITE IN THE ABOVE PARENTHESIS THE THRESHOLD WEIGHT FOR THIS PATIENT'S HEIGHT FROM THE HEIGHT / WEIGHT TABLE IN THE ANOREXIA NERVOSA MODULE.	NO	YES

NO **YES**

M8 IS **M5** CODED **YES** AND IS EITHER **M6** OR **M7** CODED **NO**?

BULIMIA NERVOSA

CURRENT

IS **M7** CODED **YES**? **NO** **YES**

ANOREXIA NERVOSA

Binge Eating/Purging Type

CURRENT

N. GENERALIZED ANXIETY DISORDER

(MEANS : GO TO THE DIAGNOSTIC BOX, CIRCLE NO, AND MOVE TO THE NEXT MODULE)

N1 a	Were you excessively anxious or worried about several routine things, over the past 6 months? IN ENGLISH, IF THE PATIENT IS UNCLEAR ABOUT WHAT YOU MEAN, PROBE BY ASKING (Do others think that you are a "worry wart"?) AND GET EXAMPLES .	NO	YES
B	Are these anxieties and worries present most days?	NO	YES
	ARE THE PATIENT'S ANXIETY AND WORRIES RESTRICTED EXCLUSIVELY TO, OR BETTER EXPLAINED BY, ANY DISORDER PRIOR TO THIS POINT?	NO	YES
N2	Do you find it difficult to control the worries?	NO	YES
N3	FOR THE FOLLOWING, CODE **NO** IF THE SYMPTOMS ARE CONFINED TO FEATURES OF ANY DISORDER EXPLORED PRIOR TO THIS POINT**.**		
	When you were anxious over the past 6 months, did you, most of the time:		
A	Feel restless, keyed up or on edge?	NO	YES
B	Have muscle tension?	NO	YES
C	Feel tired, weak or exhausted easily?	NO	YES
D	Have difficulty concentrating or find your mind going blank?	NO	YES
E	Feel irritable?	NO	YES
F	Have difficulty sleeping (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)?	NO	YES
	ARE **3** OR MORE **N3** ANSWERS CODED **YES?**	NO	YES

N4	Do these anxieties and worries disrupt your normal work, school or social functioning or cause you significant distress?	**NO**	**YES**

GENERALIZED ANXIETY DISORDER

CURRENT

O. RULE OUT MEDICAL, ORGANIC OR DRUG CAUSES FOR ALL DISORDERS

IF THE PATIENT CODES POSITIVE FOR ANY CURRENT DISORDER ASK:

Just before these symptoms began:

O1a	Were you taking any drugs or medicines?	❒ No	❒ Yes	❒ Uncertain
O1b	Did you have any medical illness?	❒ No	❒ Yes	❒ Uncertain
	IN THE CLINICIAN'S JUDGMENT: ARE EITHER OF THESE LIKELY TO BE DIRECT CAUSES OF THE PATIENT'S DISORDER? IF NECESSARY ASK ADDITIONAL OPEN---ENDED QUESTIONS.			
O2	**SUMMARY**: HAS AN ORGANIC CAUSE BEEN RULED OUT?	❒ No	❒ Yes	❒ Uncertain

P. ANTISOCIAL PERSONALITY DISORDER

(MEANS : GO TO THE DIAGNOSTIC BOX AND CIRCLE NO)

P1	**Before you were 15 years old, did you:**		
A	repeatedly skip school or run away from home overnight?	NO	YES
B	repeatedly lie, cheat, "con" others, or steal?	NO	YES
C	start fights or bully, threaten, or intimidate others?	NO	YES
D	deliberately destroy things or start fires?	NO	YES
E	deliberately hurt animals or people?	NO	YES
F	force someone to have sex with you?	NO	YES
	ARE **2** OR MORE **P1** ANSWERS CODED **YES**?	NO	YES

DO NOT CODE **YES** TO THE BEHAVIORS BELOW IF THEY ARE EXCLUSIVELY POLITICALLY OR RELIGIOUSLY MOTIVATED**.**

P2	**Since you were 15 years old, have you:**		
A	repeatedly behaved in a way that others would consider irresponsible, like failing to pay for things you owed, deliberately being impulsive or deliberately not working to support yourself?	NO	YES
B	done things that are illegal even if you didn't get caught (for example, destroying property, shoplifting, stealing, selling drugs, or committing a felony)?	NO	YES
C	been in physical fights repeatedly (including physical fights with your spouse or children)?	NO	YES
D	often lied or "conned" other people to get money or pleasure, or lied just for fun?	NO	YES
E	exposed others to danger without caring?	NO	YES
F	felt no guilt after hurting, mistreating, lying to, or stealing from others, or after damaging property?	NO	YES

ARE **3** OR MORE **P2** QUESTIONS CODED **YES**?

NO YES

ANTISOCIAL PERSONALITY DISORDER
LIFETIME

THIS CONCLUDES THE INTERVIEW