



Dissertation By
HENOK ADMASSU
GURANDA

UNIVERSITY OF SOUTH
AFRICA

ALCOHOL USE AMONGST
PSYCHIATRIC IN-PATIENTS IN A
MENTAL HOSPITAL
IN ETHIOPIA

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**ALCOHOL USE AMONGST PSYCHIATRIC IN-PATIENTS IN A MENTAL HOSPITAL
IN ETHIOPIA**

by

HENOK ADMASSU GURANDA

submitted in accordance with the requirements

for the degree of

MASTER OF PUBLIC HEALTH

at the

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SUPERVISOR: PROF JE MARITZ

SEPTEMBER 2013

Student number: 46338721

DECLARATION

I declare that **ALCOHOL USE AMONGST PSYCHIATRIC IN-PATIENTS IN A MENTAL HOSPITAL IN ETHIOPIA** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.



Guranda Henok A.

Full names

Guranda Henok Admassu

25 August 2013

Date

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ALCOHOL USE AMONGST PSYCHIATRIC IN-PATIENTS IN A MENTAL HOSPITAL IN ETHIOPIA

STUDENT NUMBER: 46338721
STUDENT: GURANDA HENOK ADMASSU
DEGREE: MASTER OF PUBLIC HEALTH
DEPARTMENT: HEALTH STUDIES, UNIVERSITY OF SOUTH AFRICA
SUPERVISOR: PROFESSOR JE MARITZ

ABSTRACT

The purpose of this study was to explore alcohol use among psychiatric in-patients in a mental hospital in Ethiopia. A quantitative, descriptive, cross-sectional study design was used. Data were collected through face to face structured interviews and a document analysis checklist. A researcher-modified interview-version of the Alcohol Use Disorder Identification Test (AUDIT) questionnaire was used to measure alcohol use. The study population comprised of 70 psychiatric in-patients. Data analysis showed that being male, living in an urban area, being diagnosed with schizophrenia, and having parents who drink alcohol had a statistical significant association with the alcohol use of the respondents. Respondents reported that it was difficult to abstain or stop using alcohol. They also felt discriminated against when forbidden by relatives to drink. It was alarming to find that thioridazine, which has been discontinued in most countries for the treatment of psychosis, was still being prescribed in Ethiopia. The study highlighted the need for health education to strengthen patients' perceptions about the negative consequences of alcohol use. Care should be taken when prescribing psychotropic drugs such as thioridazine to psychiatric in-patients because of possible cardiotoxic effects.

KEY CONCEPTS

Alcohol use; AUDIT; psychiatric in-patients; mental hospital.

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LIST OF ABBREVIATIONS

AJOL	African Journals Online
APA	American Psychiatric Association
AUDADIS	Alcohol Use Disorder and Diagnostic Interview Schedule
AUDIT	Alcohol Use Disorder Identification Test
CAGE	Cut down, Annoyed, Guilty, Early-morning
CIDI	Composite International Diagnostic Interview
CODESRIA	Council of Development for Social Science Research
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders – 4 th edition
EB	Encyclopaedia Britannica
EPHA	Ethiopian Public Health Association
EJHD	Ethiopian Journal of Health Development
IAS	Institute of Alcohol Studies
IQR	Inter-quartile range
MHCU	Mental health care user
SCAN	Schedules for Clinical Assessment in Neuropsychiatry
SITC	Standard International Trade Classification
SPSS	Statistical Package for the Social Sciences
UK	United Kingdom
UNFPA	United Nations Population Fund
UNISA	University of South Africa
USA	United States of America
WHO	World Health Organization

LIST OF ANNEXURES

- Annexure A: Ethical clearance certificate: Research and Ethics Committee, Department of Health Studies, Unisa
- Annexure B: Application letter to the Federal Ministry of Health to conduct this study
- Annexure C: Support letter from Federal Ministry of Health of Ethiopia to conduct the study
- Annexure D: Application letter to the study hospital to conduct the study
- Annexure E: Permission from the Ethical Committee of the study hospital to conduct the study
- Annexure F: Consent form
- Annexure G: Structured interview schedule
- Annexure H: Document analysis checklist
- Annexure I: Confidentiality agreement with assistant interviewer
- Annexure J: WHO authorisation to translate and publish the interview-version AUDIT questionnaire in the Amharic language
- Annexure K: Evidence of service of a statistician
- Annexure L: Evidence of service of a translator
- Annexure M: Original AUDIT questionnaire Vs modified AUDIT questionnaire

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Throughout the world the use of alcohol is represented as an integral part of meals, celebrations, and religious rituals; hence alcohol and/or alcohol-based beverages frequently form the foundation of social interactions (World Health Organization [WHO] 2000:4). Alcohol use refers to “the ingesting of alcohol by an individual” (Sadock & Sadock 2007:390-391). Since 2004, when the WHO estimates indicated that alcohol consumption worldwide at the time was approximately 2 billion (WHO 2004a:1), the global estimated alcohol consumption has markedly increased to 3.85 billion in 2011, thus an increase of 1.85 billion in 7 years (WHO 2011:14).

Mental health, physical health, and social health are vital elements of life that are closely linked and deeply interdependent. According to the WHO (2001:3), as an understanding of the intricate relationship between these elements increases, it becomes even more apparent how crucial mental health is to the overall wellbeing of individuals, societies, and countries. Alcohol use and abuse can lead to substantial negative mental health consequences which then, in turn, present a significant challenge to the mental health sector.

Alcohol is an often-used substance by psychiatric patients (Adamson, Onifade & Ogunwale 2010:15; Hauli, Ndeti, Jande & Kabangila 2011:240). Some people with mental disorders turn to alcohol as a way of diminishing stress (Leeies, Pagura, Sareen & Bolton 2010:733). This reaction may be related to the anxiety-lowering effects of lower doses of alcohol. Sadock and Sadock (2007:391-393) state anxiety in people fixated at the oral stage may also be reduced by drinking alcohol. As a result, alcohol is used by some people having anxiety to reduce their tension and psychological pain. However, adverse effects of alcohol use have been observed in people with certain mental disorders including substance-related disorders, antisocial personality disorder, mood disorders, and generalised anxiety disorder (Sadock & Sadock 2007:391-393).

According to the WHO (2000:3), alcohol use is strongly related to social consequences such as drunken driving injuries and fatalities, aggressive behaviour, family disruptions, and reduced productivity which can all pave the way for mental conditions. This presents a vicious circle that is difficult to break as alcohol use among psychiatric patients might complicate the treatment as well as the clinical course of mental disorders (WHO 2009:30).

Little information exists about alcohol use among psychiatric in-patients in Ethiopia. Therefore, this study was undertaken to generate information on alcohol use among psychiatric in-patients in a mental hospital in Ethiopia.

1.2 RESEARCH PROBLEM

In this section the background and statement of the research problem are presented.

1.2.1 Background to the research problem

The actual quantities of alcoholic beverages consumed in sub-Saharan Africa are difficult to establish because an estimated 50% of the de facto alcohol consumption in the region is unrecorded due to the fact that non-commercial alcoholic beverages are widely produced and consumed in the area (Morojele, Parry, Agossou, Poznyak, Obot, Odejide & Koumare 2006:187).

The significance of the extent of the problem in sub-Saharan Africa is clear when considering the total recorded adult per capita consumption in this region with that in some other parts of the world. During 2000/2001, for example, the total recorded adult per capita alcohol consumption in litres of pure alcohol in Uganda was 19.47, in Nigeria it was 10.04, in Burundi it was 19.47 whereas in Japan it was 7.38. Canada indicated 8.26 while Iceland indicated the adult per capita rate of pure alcohol consumption was the lowest, namely 5.74. The total recorded adult per capita consumption for Ethiopia during the same year was 0.91 litres (WHO 2004a:11-12). What significantly relates to the current study is that in the same year (2000/2001) Rehm, Rehn, Room, Monteiro, Gmel, Jernigan and Frick (2003:151) conducted a study on unrecorded adult alcohol consumption in Ethiopia. The findings showed that the alcohol consumption per drinker

in the country was 16.6 litres which was, in fact, the world's highest consumption per consumer for the same period.

Very few research studies have been done to examine the prevalence of alcohol drinking in Africa in general and in Ethiopia in particular. Nevertheless, in a study among a rural community in south-south Nigeria about 33% of the inhabitants had harmful drinking habits while 12.7% were dependent on alcohol (Brisibe & Ordinoha 2011:100). A nation-wide survey among adults (15 years and above) in South Africa (N=13 828) indicated that 28% of the total population consumed alcohol in the month preceding the study period (Peltzer, Davids & Njuho 2011:32). In a study conducted among hospital outpatients in a hospital in Gauteng Province (N=1 532), South Africa, 34.8% of the hospital outpatients were hazardous or harmful alcohol users (Pengpid, Peltzer & Van der Heever 2011:2634). Another study among male sex workers in the Mombasa district of Kenya showed that 70% used alcohol during the study period, and out of this 70%, harmful alcohol users constituted 15% while 35% were hazardous alcohol users and the rest were dependent on alcohol (Luchters, Geibel, Syengo, Lango, King'ola, Temmerman & Chersich 2011:384). In studies conducted with Ethiopian high school students and undergraduate medical students it was found that the prevalence of alcohol drinking was about 22% (Deressa & Azazh 2011:660; Reda, Moges, Wondmagegn & Biadgilign 2012:213). In another city-wide survey on female sex workers (N=2 487) in Addis Ababa, Ethiopia, it was revealed that the prevalence of alcohol use was 80% of which 58% was harmful drinkers (Alem, Kebede, Mitike, Enqusellase & Lemma 2006:94-95). The prevalence of alcohol dependence among Zeway islanders in Ethiopia was found to be 1.5% (Kebede, Fekadu, Alem, Beyero, Shibire & Deyessa 2005:75).

Despite the fact that alcohol use is a significant threat to mental health, only a few research studies have been conducted in Ethiopia to measure the magnitude of alcohol consumption among psychiatric in-patients.

1.2.2 Statement of the research problem

Alcohol use may bring about physical, mental, psychosocial and financial challenges (WHO 2004a:8, 35). Unfortunately, these problems are compounded for people who have been diagnosed with a mental condition.

Alcohol affects almost every organ system of the body (refer to Table 1.1). Alcohol users who consume large amounts of alcohol every day and have repeated episodes of drinking may be prone to chronic diseases such as cancer, increased blood pressure, cardiac problems, diabetes, cirrhosis, a stroke, and mental disorders such as depression; all may affect drinkers after many years of alcohol use (WHO 2000:3; WHO 2004a:45). Also, reduced alcohol effect in long-term alcohol drinkers can result in tolerance. After one to two weeks of daily drinking, there can be up to a 30% increase in hepatic ethanol metabolism which disappears as rapidly as it develops (Longo, Kasper, Jameson, Fauci, Hauser & Loscalzo 2012:5112). Neurochemical changes maintain relatively normal physiological functioning despite the presence of alcohol. As a result, subsequent decreases in blood levels can contribute to symptoms of withdrawal which, in turn, can again compel an individual to drink. This may not resolve for several weeks following cessation of drinking if it is caused by chronic alcohol exposure. According to Longo et al (2012:5112) and Sadock and Sadock (2007:394), individuals also learn to adapt their behaviour so that they can function better than expected when under the influence of alcohol.

TABLE 1.1: POSSIBLE CONSEQUENCES OF ALCOHOL USE ON ORGAN SYSTEMS OF INDIVIDUALS

SYSTEM	OUTCOMES OF ALCOHOL USE ON ORGAN SYSTEMS
Nervous system	<ul style="list-style-type: none"> • Disturbed sleep • Snoring and exacerbation of sleep apnoea due to relaxation of muscles in the pharynx • Blackout (an episode of temporary anterograde amnesia) • Prominent disturbing dreams • Impaired judgement and coordination increasing the risk of accidents and injury • Headache • Thirst • Nausea and/or vomiting • Fatigue the following day (a hangover syndrome) <p>Chronic high doses of alcohol use may result in:</p> <ul style="list-style-type: none"> • Peripheral neuropathy • Memory impairment • Cerebellar atrophy with resultant unsteady gait accompanied by mild nystagmus

SYSTEM	OUTCOMES OF ALCOHOL USE ON ORGAN SYSTEMS
	<ul style="list-style-type: none"> • Wernicke's syndrome (ophthalmoparesis, ataxia, and encephalopathy) • Korsakoff's syndrome/psychosis (retrograde and anterograde amnesia) • Brain atrophy
Gastrointestinal system <ul style="list-style-type: none"> • Oesophagus and stomach • Pancreas and liver 	<ul style="list-style-type: none"> • Oesophagus and stomach inflammation with epigastric distress and gastrointestinal bleeding • Acute pancreatitis • Increase in fat accumulation of liver cells resulting in alcohol induced hepatitis and cirrhosis • Enhanced vulnerability to infections in chronic drinkers
Cancers	<ul style="list-style-type: none"> • Breast cancer • Oral and oesophageal cancers • Rectal cancer
Haematopoietic system	<ul style="list-style-type: none"> • Increase in red blood cell size • Folic acid deficiency • Decreased white blood cell and platelet counts
Cardiovascular system	<ul style="list-style-type: none"> • Decrease in myocardial contractility • Hypertension • Increased risk for coronary artery disease • Increased risk for cardiomyopathy
Genitourinary system and foetal development	<ul style="list-style-type: none"> • Decreased erectile capacity • Testicular atrophy • Decrease in ejaculate volume and sperm cell count in men • In women can result in amenorrhoea • Decrease in ovarian size and absence of corpus luteum resulting in infertility • Increased risk of spontaneous abortion • Heavy drinking during pregnancy has serious consequences on foetal development (foetal alcohol spectrum disorder) characterised by facial dysmorphic features involving the eyes and ears, small teeth, limitation in joint movement, microcephaly with mental retardation
Other systems	<ul style="list-style-type: none"> • Alcoholic myopathy • Lower bone density • Increased risk of fracture due to decreased growth in the epiphyses • Hormonal changes, for example, an increase in cortisol level, modest and reversible decrease in thyroid hormones, inhibition of vasopressin secretion resulting in over hydration

(Longo et al 2012: 5112-5114)

The effects of the interactions between alcohol and psychotropic drugs can result in unpredictable and/or catastrophic consequences. In Table 1.2 it is indicated how alcohol can interact with medications such as antipsychotics, antidepressants, anti-anxiety pills, and mood stabilisers by making them less effective and causing toxicity which can even claim the life of the psychiatric patient on treatment.

TABLE 1.2: COMMON MENTAL DISORDERS, THEIR TREATMENTS AND POSSIBLE ALCOHOL INTERACTIONS WITH TREATMENTS

MENTAL DISORDER	TREATMENT	POSSIBLE ALCOHOL INTERACTIONS WITH TREATMENT
<p>PSYCHOTIC DISORDERS (Primary psychotic disorders such as schizophrenia, psychotic disorders secondary to medical disorders, and substance induced psychotic disorders)</p>	<ul style="list-style-type: none"> • Conventional: <ul style="list-style-type: none"> ○ phenothiazines such as chlorpromazine and thioridazine ○ butyrophenones such as haloperidol ○ diphenylbutylpiperidines such as pimozide ○ thioxanthenes such as flupentixol ○ substituted benzamides such as sulpiride • Second-generation antipsychotics <ul style="list-style-type: none"> ○ clozapine ○ olanzapine ○ risperidone 	<ul style="list-style-type: none"> • Tolerance • Toxicity • Enhanced sedation • Worsening of motor and intellectual impairment • Stupour • Coma • Death (in extreme cases)
<p>DEPRESSIVE DISORDERS (Mild, moderate or severe)</p>	<ul style="list-style-type: none"> • Tricyclic or related antidepressants <ul style="list-style-type: none"> ○ amitriptyline ○ clomipramine ○ doxepin ○ imipramine ○ trazodone • Monoamine oxidase inhibitor <ul style="list-style-type: none"> ○ phenelzine ○ tranlycypromine • Selective serotonin reuptake inhibitors <ul style="list-style-type: none"> ○ fluoxetine ○ sertraline 	<ul style="list-style-type: none"> • Same as above

MENTAL DISORDER	TREATMENT	POSSIBLE ALCOHOL INTERACTIONS WITH TREATMENT
	<ul style="list-style-type: none"> • Other antidepressants such as duloxetine and venlafaxine 	
BIPOLAR DISORDERS	<ul style="list-style-type: none"> • Antipsychotics <ul style="list-style-type: none"> ○ valproate ○ carbamazepine ○ lithium • Adjunctive short-term treatment with a benzodiazepine such as diazepam 	<ul style="list-style-type: none"> • Same as above
GENERALISED ANXIETY AND SLEEP DISORDERS	<ul style="list-style-type: none"> • Benzodiazepines (reduce anxiety at low doses and induce sleep at higher doses) • Antidepressants (considered when depression presents or when long-term therapy is needed) 	<ul style="list-style-type: none"> • Same as above
OBSESSIVE-COMPULSIVE DISORDERS AND PANIC ATTACKS	<ul style="list-style-type: none"> • Serotonin reuptake inhibitors such as clomipramine and other antidepressants 	<ul style="list-style-type: none"> • Same as above
SUBSTANCE DEPENDENCE	<ul style="list-style-type: none"> • Benzodiazepines and thiamine in alcohol dependence • Acamprosate, disulfiram and naltrexone in reducing relapse of alcohol dependence • Methadone and buprenorphine in opioid dependence 	<ul style="list-style-type: none"> • Same as above

(Sadock & Sadock 2007:396; WHO 2009:2, 17, 27, 43, 58)

Alcohol use in some psychiatric patients may be attributable to genetic vulnerabilities, impaired judgement in the use of alcohol caused by the mental disorder, or an attempt to use alcohol to alleviate some of the psychiatric symptoms or side effects of psychotropic medications (Longo et al 2012:5113). However, alcohol use frequently complicates the treatment and the clinical course of mental disorders (WHO 2009:30). On the other hand, treating mental disorders can decrease the use of tobacco, alcohol, and possibly other substances of abuse (WHO 2009:23) as patients acquire effective alternatives to combat their psychiatric symptoms during their treatment.

Furthermore, people using alcohol can demonstrate abnormal behaviour: they can become violent, depressed, and have memory loss. The use of 20-40 g of absolute alcohol (which is the equivalent of two to four standard drinks; two to four 300 ml bottles of beer; two to four glasses of wine, or two to four shots of spirits) per day is a risk factor for accidents, injuries, and many social problems (Babor, Higgins-Biddle, Saunders & Monteiro 2001:6-7). Apart from the risk of ill health to the individual, the health and social consequences of alcohol use may place a huge financial burden on health care institutions, law enforcement agencies, and various other public services of a nation. Similarly important, alcohol use may not only cause illness and distress to the drinker but it also places an additional burden on his or her family and friends (WHO 2004a:22).

The above discussion emphasises that a need existed to conduct a study on alcohol use in psychiatric in-patients in Ethiopia. In fact, while working in a mental hospital, the researcher observed that a number of psychiatric in-patients were admitted and readmitted on a continual basis due to alcohol use. The researcher thus felt compelled to address the alcohol use of psychiatric in-patients in Ethiopia due to the scarcity of information and knowledge that exist about the phenomenon in the country, and also because the misuse of alcohol has a profound impact on the user, her or his family as well as on society at large.

1.3 RESEARCH PURPOSE AND OBJECTIVES

The purpose and objectives of the study are presented next.

1.3.1 Purpose of the study

The purpose of this study was to explore alcohol use among psychiatric in-patients in a mental hospital in Ethiopia. It was the researcher's belief that the new knowledge and information obtained by conducting this study could be used to address alcohol use among the psychiatric in-patients and possibly enhance the effectiveness of their treatment.

1.3.2 Study objectives

The objectives of this study were to

- identify the factors associated with alcohol use among psychiatric in-patients
- describe the socio-demographic factors influencing such alcohol use
- assess the clinical correlates of alcohol use
- describe the perception of psychiatric in-patients regarding alcohol use
- propose recommendations for the hospital management based on the findings to address alcohol use among psychiatric in-patients

1.4 RESEARCH QUESTIONS

The research questions that guided this study are given below.

- Which factors are associated with alcohol use?
- Which socio-demographic factors influence alcohol use?
- Which clinical correlates are associated with alcohol use?
- What are the perceptions of psychiatric in-patients regarding alcohol use?
- What can be done by the hospital management to address alcohol use among psychiatric in-patients?

1.5 SIGNIFICANCE OF THE STUDY

It was envisaged that the findings obtained from this study could be used by the management of mental hospitals to understand the pattern of alcohol use among the psychiatric in-patients, and that it would assist them to design suitable interventions to manage alcohol use in psychiatric in-patients in the future. It was further observed that the findings of this study can serve as a guideline for the framing of alcohol-related strategies as preventative measurements to avoid the negative consequences concomitant with alcohol use by psychiatric patients in a mental hospital. Furthermore, it can form the baseline for further studies in this domain. Appropriate health education strategies can also be designed based on the research findings to inform psychiatric patients, their family members and caretakers about the potential hazardous

consequences of using alcohol together with psychotropic drugs and its potential negative effects on specific psychiatric conditions.

1.6 DEFINITIONS

For consistency and a better understanding of the key concepts used in this study, the key concepts are defined next. The operational definitions as related to the study are also discussed.

1.6.1 Definitions of key concepts

The key concepts used in this study are presented next.

1.6.1.1 Alcohol

'Alcohol' is defined in the *Oxford Concise Colour Medical Dictionary* (2002:17) as "any class of organic compounds formed when a hydroxyl group (-OH) is substituted for a hydrogen atom in a hydrocarbon". The *Oxford Advanced Learner's Dictionary of Current English* (2010:35) defines 'alcohol' as "[the intoxicating constituent of] drinks such as beer, spirits, wine and other alcoholic beverages that can make people drunk". The alcohol in alcoholic beverages is ethanol or ethyl alcohol, which has the formula CH_3CH_2OH , and is produced by fermentation of sugar by yeast (*Oxford Concise Colour Medical Dictionary* 2002:17). An alcoholic beverage is a liquid that contains ethanol which is intended for drinking and in most countries the threshold for the content of ethanol by volume in an alcoholic beverage is set at $\geq 0.5\%$ (WHO 2010a:5).

In this study the concept 'alcohol' referred to traditional or modern alcoholic beverages consumed by Ethiopians. The types of alcoholic beverages consumed in Ethiopia are discussed in detail in Chapter 2.

1.6.1.2 Alcohol use

'Alcohol use' refers to "the ingesting of alcohol by an individual" (Sadock & Sadock 2007:390-391).

In this study 'alcohol use' pertained to the habit of drinking (ingesting) alcohol by psychiatric in-patients in a mental hospital in Ethiopia.

1.6.1.3 Psychiatric in-patients

'Psychiatric in-patients' are patients with mental disorders admitted to a mental hospital and who remain there for a period of time for treatment (*Oxford Concise Colour Medical Dictionary* 2002:353, 570). Mental disorder, according to the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV), is defined as a behavioural or psychological syndrome or pattern that is associated with distress (such as a painful symptom), or a significant increased risk of suffering, death and pain, or an important loss of freedom (American Psychiatric Association [APA] 1994).

The concept 'psychiatric in-patient' in this study referred to a mental health care user (MHCU) who was admitted to a mental hospital in Ethiopia for a minimum of two weeks or a maximum of three months after having been diagnosed with a mental disorder. It must be noted that the concepts 'psychiatric in-patient' and 'respondent' will be used interchangeably throughout this study.

1.6.1.4 Mental hospital

A 'mental hospital' is a hospital for the care of patients with mental disorders (*Oxford Concise Colour Medical Dictionary* 2002:642).

The 'mental hospital' in this study referred to a hospital dedicated to the treatment of patients with mental disorders in Addis Ababa, Ethiopia.

1.6.2 Operational definitions

Operational definitions allow variables to be measured or manipulated in a study (Burns & Grove 2009:40). The operational definitions involved in this study are outlined below.

1.6.2.1 Standard drink

A 'standard drink' (or simply a drink) is equivalent to ten grams of alcohol (Babor et al 2001:32). In Ethiopia a standard drink has not yet been enumerated (*Legal aspects ...* 2011).

In this study a 'standard drink' referred to a can of *tella*, or one 330 ml bottle of *tej*, or one shot (40 ml) of *araki*, or one 330 ml bottle of beer, or one 140 ml glass of wine, or one shot (40 ml) of industrial spirits (Babor & Higgins-Biddle 2001:31).

1.6.2.2 Emotionally stable

In the *Oxford Advanced Learner's Dictionary of Current English* (2010:479) 'emotion' is defined as "a strong feeling such as love, fear or anger". In the same dictionary (2010:1447) "stable" is defined as "(of a person) not easily upset or disturbed". This means that an 'emotionally stable' person is a person whose feelings are not easily upset or disturbed.

In this study 'emotionally stable' referred to a psychiatric in-patient's ability to respond to the study questions appropriately as judged by the ward psychiatric nurse and the researcher on the day his or her interview was conducted.

1.6.2.3 Coherent

'Coherent' is defined in the *Oxford Advanced Learner's Dictionary of Current English* (2010:275) as "(of a person) able to talk clearly"; to be 'coherent' thus means one is able to speak clearly, logically and consistently.

In this study 'coherent' meant that the psychiatric in-patient had to be able to converse clearly and logically on the day of his or her interview. The coherency of each in-patient's communication during their individual interviews was determined by the ward psychiatric nurse and the researcher.

1.6.2.4 Perception

'Perception' is "the process by which information about the world is analysed and made meaningful" (*Oxford Advanced Learner's Dictionary of Current English* 2010:1087).

'Perception' in the context of the current study pertained to the views of the individual psychiatric in-patients regarding alcohol use and its effects.

1.6.2.5 Socio-demographic factors

Socio-demographic factors are attributes of the subjects that are measured during a study and which are then used to describe the sample (Burns & Grove 2009:179).

In this study, the socio-demographic factors that were measured included the psychiatric in-patients' age, gender, marital status, educational level, religion, occupation, ethnicity, residential status, and income.

1.6.2.6 Clinical correlates

The in-patients' psychiatric diagnoses, their individual periods of hospitalisation, prescribed psychotropic drugs, and incidents that could be related to alcohol consumption and/or alcohol were included in the clinical variables. Also, the interactions of alcohol with the prescribed drugs, the psychiatric patients' relapses and readmissions, and their use of substances other than alcohol were further clinical variables that were assessed. The alcohol use variables of the psychiatric in-patients were compared with these clinical variables.

In this study 'clinical correlates' referred to the clinical variables of the psychiatric in-patients that correlated with their respective alcohol use.

1.7 RESEARCH DESIGN AND METHOD

This section briefly addresses the research design, the study population, sampling, the instrument, data collection, and data analysis. A full description of the research design and methods is presented in Chapter 3.

1.7.1 Research design

An applied quantitative and descriptive cross-sectional design with an analytic component was used to explore alcohol use among psychiatric in-patients in a mental hospital in Ethiopia (Burns & Grove 2009:34; Joubert & Ehrlich 2007:78).

1.7.2 Population and sampling

The population in this study consisted of all the psychiatric in-patients in a specific mental hospital in Ethiopia. The total population at the time of the study was 264 psychiatric in-patients (N=264). Coherent and emotionally stable psychiatric in-patients who had been admitted to the mental hospital for between two weeks and three months were selected for this study. A random sampling technique was used to select the study cases (Bland 2000:30). The size of the sample was 70 psychiatric in-patients (n=70) (refer to the calculation outlined on page 47 in Chapter 3).

1.7.3 Data collection

Data were collected from 26 February 2013 to 1 March 2013 by means of a structured interview schedule and a document analysis checklist of the psychiatric in-patients' medical files. Each interview lasted for approximately 10 minutes. The researcher and the assistant interviewer read each item from the interview schedule orally and recorded every response during each interview (Polit & Beck 2008:414). Recording the in-patient's relevant data from the medical files to the checklist took the researcher only five minutes. A pre-testing of the data collection instruments was conducted with eight psychiatric in-patients (four male and four female patients) who had been admitted to the mental hospital prior to the study. These psychiatric in-patients who were involved in the pre-testing were excluded from the study proper, and their results did not form part of the research study data analysis (Polit & Beck 2008:762).

1.7.4 Reliability and validity

The interview schedule for this study was compiled and adapted by the researcher after reviewing the literature to find more information on the phenomenon, namely to explore alcohol use among psychiatric in-patients in a mental hospital in Ethiopia (refer to **Annexure J**). A translated, pretested, structured, and standardised interview schedule was used to assure face validity and content validity (Joubert & Ehrlich 2007:107, 109, 120, 122). In order to supplement the data obtained from the structured interviews, the researcher utilised a checklist to gather information from the psychiatric in-patients' medical records that were kept in every ward (O'Leary 2004:10). Before these records were viewed, the researcher had requested and obtained permission from the relevant hospital authorities (refer to **Annexures D and E**).

1.7.5 Data analysis

The quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) version 21. The analysis of the data in this study consisted of both descriptive statistics and inferential statistics (Burns & Grove 2009:696, 704). The data analysis was performed with the assistance of a statistician (refer to **Annexure K**). The qualitative data were analysed using content analysis.

1.8 ETHICAL CONSIDERATIONS

Before conducting this study, ethical approval and clearance was obtained from the Ethical Committee of the University of South Africa (number HSHDC/91/2012 – refer to **Annexure A**) (Unisa). Permission was also obtained from the Federal Ministry of Health of Ethiopia (refer to **Annexure C**) and the Ethical Committee (refer to **Annexure E**) of the specific hospital where this study was conducted (Keogh & Daly 2009:277).

The basic ethical principles of respect for persons, beneficence and justice, and the application thereof according to the Belmont Report guided the ethical considerations in this study (*The Belmont report ... 1979*).

Ethics in research are principles that guide responsible conduct; ethical research is essential to generate a sound clinical evidence-based practice (Burns & Grove 2009:185; Fathalla & Fathalla 2004:21).

In the next section the methods used to protect the respondents, the rights of the institutions involved, and the scientific integrity of the study are noted. In this study all ethical principles were applied and adhered to.

1.8.1 Protecting the respondents

The researcher adhered to the strict ethical requirements advocated in the Belmont Report to protect the rights of the respondents. This issue was also emphasised during the training of the assistant interviewer who assisted with the interviews of the psychiatric in-patients. The criteria by which the researcher addressed the ethical issues to protect the respondents are elaborated on under the principles of respect for persons, beneficence, and justice (Burns & Grove 2009:188).

1.8.1.1 *Respect for persons*

Respect for persons means that persons have the right to self-determination; in other words, the respondents have the freedom to participate or decline participation in a research study (Burns & Grove 2009:188). Self-determination implies that human beings are free to control their destiny without external controls (Burns & Grove 2009:189-190). To ensure this right, the researcher made certain that informed consent was obtained from each respondent before every interview was conducted (refer to **Annexure F**).

On the proposed day of the interview, the researcher and the assistant interviewer had a pre-planned appointment with the ward managers of the wards selected for that day. The researcher and the assistant interviewer arrived on time. The researcher informed the ward managers of every bed number of the psychiatric in-patients selected for the study. First, the ward managers asked the selected psychiatric in-patients individually whether they would be willing to hear information about an alcohol study. Those who expressed interest were introduced to the researcher and the assistant interviewer one-by-one (Brink, Van der Walt & Van Rensburg 2006:47).

The researcher and the assistant interviewer then proceeded to describe the purpose of the study, the objectives and the study process in a simple and clear manner using the local language. Notably, the psychiatric in-patients' rights to decide freely whether to participate, to refuse to respond to any questions they did not wish to respond to, and their right to withdraw from the interview at any time without the risk of penalty or prejudicial treatment, were emphasised. The selected sample was allowed to ask for clarification about anything that they did not understand with regard to the study and the researcher provided suitable explanations and answered the psychiatric in-patients' questions. Those who remained interested proceeded to the consent process (Joubert & Ehrlich 2007:35).

The consent form was made easy to understand: simple grammar in the local language was used and the cognitive level of the psychiatric in-patients was taken into account when the consent form was drawn up. Considering the difficulties that might arise from the specific psychopathologies, the researcher as well as the assistant interviewer made use of effective communication skills that included the use of the appropriate, understandable language, repetitions, and sufficient time provision for asking questions and answering them (Fulford & Howse 1993:89). The consent forms were read to the psychiatric in-patients in the national Ethiopian language (Amharic). An expert in English-Amharic translations translated the consent form from English into Amharic (refer to **Annexure L**). After the provision of adequate, accurate, complete, and relevant information about the study and ensuring that each of the psychiatric in-patients comprehended the information given, consent was sought on an entirely voluntary basis. The consent of each respondent was also obtained to the extent of his or her capabilities. (In the case where an in-patient needed a slow narration/re-read of the consent form, this was done as required). Those psychiatric in-patients who voluntarily decided to participate in the study were then requested to sign the consent forms (Joubert & Ehrlich 2007:35).

1.8.1.2 Beneficence

Beneficence requires that the researcher “do good” and “do no harm” (Burns & Grove 2009:188). In line with this principle, the researcher respected the rights of the psychiatric in-patients as participants and to protect them from discomfort and harm, be

it psychological, social or economic (Burns & Grove 2009:281). The psychiatric in-patients were protected legally by explaining this study to them as well as by the protocol of informed consent before data collection. The risk of participating was reasonable in relation to the anticipated benefits for psychiatric in-patients in the future. There was some risk that certain questions regarding alcohol use might have aroused psychologically distressing emotions. Considering this fact, the researcher was present during all interviews to manage any potential crisis situation that might have arisen. The researcher was prepared to stop the interview and lend psychological support to any psychiatric in-patient who became distressed. If necessary, the researcher was also prepared to accompany him or her to the treating doctor or psychologist in case he or she became distressed during the interview (Keogh & Daly 2009:281).

Understanding the emotional vulnerability of the psychiatric in-patients, the researcher and the assistant interviewer both displayed an open, non-judgmental attitude to avoid communication barriers. The psychiatric in-patients were informed that it was possible for them to contact the researcher if they experienced any distress following the interview or even if their distress increased after having been interviewed. Their facial gestures and body movements were closely observed for signs of discomfort during the interviews. Although the researcher was prepared to support those who displayed undue discomfort or became overly distressed (such as by terminating the interview until she or he could continue), not one became emotionally upset during the interview or as a result of the interview on the day of the interview or thereafter (Davies 2001:397; Keogh & Daly 2009:281).

1.8.1.3 Justice

Justice reflects that human subjects should be treated fairly (Burns & Grove 2009:188). This principle encompasses the right to fair treatment and privacy.

- **Right to fair treatment**

To ensure fair selection and representativeness, the respondents were selected by a probability sampling technique. The respondents thought to be vulnerable to distress were not excluded from participation, but were treated with care (Burns & Grove 2009:191; Fulford & Howse 1993:88). Care in this case referred to “the emphasis given on mutuality between the interviewers and the respondents”, with the interviewers

attempting to establish equality and warmth (Keogh & Daly 2009:279). The care also included emphasising on minimising power differentials and respecting the respondent as a person. In this study, care was achieved by developing trust with the respondents and allowing them to supply responses candidly (Keogh & Daly 2009:279). No financial benefits were promised and none were provided. The respondents were informed that, although this study would not lead to immediate benefits, the outcomes of the study might benefit psychiatric in-patients in the future. The researcher also explained that this study was performed as an academic requirement to complete his master's degree (Davies 2001:397).

- **Privacy**

Privacy is an individual's right to share or withhold personal information from others (Burns & Grove 2009:195). The researcher did not infringe on the psychiatric in-patients' privacy without their informed consent (Fathalla & Fathalla 2004:159). During the interview the psychiatric in-patient was seated in a private room (doors were closed, there were little disturbance from outside, and there were no witnesses present during any of the interviews) when consent was obtained. Thereafter, every psychiatric in-patient who accepted to participate voluntarily shared their personal information with the researcher and the assistant interviewer in this private room. The interview questions were limited only to those in the interview schedule. Information shared by the psychiatric in-patient was not discussed with others not involved in this study. No personal identifiers were written on the interview schedule (Burns & Grove 2009:195).

All the information provided was confidential as no names were used and the psychiatric in-patients' responses were given codes. No form of personal identifiers were included while collecting information from the psychiatric in-patients' ward charts (Brink et al 2006:47; Burns & Grove 2009:196). The researcher collected information from the coded psychiatric in-patients' charts on the same day as when their individual interviews were conducted. The only person to have access to the list correlating their numbers with his or her medical file number was the researcher. This was necessary to keep an audit trail in case the researcher needed to trace any information to a specific respondent's file to verify his or her data and/or to respond to queries from other researchers or from the hospital and/or health care authorities (Brink et al 2006:48). This list was kept under lock and key and only the researcher had access to it.

The study findings would also be described in such a way that the respondents could not be identified. All the electronic data stored on the researcher's computer was password protected. This data would be stored for a period of five years where after it would be erased and destroyed. The respondents were further informed that, after the completion of the research project, if it was published no personal details would be mentioned (Brink et al 2006:48).

1.8.2 Protecting the rights of the institution that was involved during the study

After obtaining an ethical clearance certificate from Unisa and a support letter from the Federal Ministry of Health in Ethiopia, permission to conduct the study was sought from the ethical committee of the mental hospital before commencement of the study. After appropriate evaluation of the proposal of this study, the ethical committee of the hospital gave the researcher permission to conduct the study. The hospital authorities were assured that conducting this study would not compromise the regular hospital duties or the quality of psychiatric in-patient service provision (Fathalla & Fathalla 2004:22). This was mentioned in the application letter to the study hospital which is attached as **Annexure D**. The Unisa Postgraduate Bursary Committee and Council of Development for Social Science Research in Africa (CODESRIA) supported the researcher with a grant for study expenses incurred (Brink et al 2006:47).

1.8.3 Scientific integrity

Scientific integrity refers to the respect for the scientific community by protecting the integrity of scientific knowledge (Brink et al 2006:47). Hence, to maintain scientific integrity, this study bore evidence of a balanced approach by including various studies regarding alcohol use. Exaggerations were avoided, statements were justified by reputable publications, and language was made easily understandable. The study topic was meaningful since it was a public health concern in Ethiopia.

The methods used were consistent with the study design and topic. The entire study process was covered: a factual account of what the research problem was, why the study was done, and how the study was done, were all provided. Complete documentation of the study process and results was maintained to enable a trustworthy audit trail. Throughout the course of the study, the researcher remained honest and

adhered to predetermined agreements with all stakeholders of this study. Objectivity was maintained by the researcher during communications on the study process with the different stakeholders (Brink et al 2006:47-48).

The researcher utilised the services of a statistician to analyse the data (see **Annexure K**). The researcher also ensured that the data were original and that the process and the results were trustworthy. References were properly acknowledged to avoid the risk of plagiarism (Joubert & Ehrlich 2007:48-49, 74; Polit & Beck 2008:191).

The researcher successfully completed psychology and psychiatry attainments during his undergraduate studies and holds the degree of doctor of medicine. The researcher also successfully completed and passed the courses in research methodology and analytic health measurement offered at Unisa. In addition, the researcher gained further experience in research during undergraduate community health attainment by completing a research proposal course and a course on scientific manuscript writing. As an undergraduate student, the researcher conducted a group research with fellow classmates on malnutrition among children under five years old in a rural village in Ethiopia, which was selected and presented at the Gondar University's Annual Scientific Conference at the time. The researcher also worked as a general practitioner in a mental hospital for five years treating patients with mental disorders at out-patient and in-patient levels. At the time the study was conducted the researcher worked as a general practice clinician with occasional encounters to treating psychiatric patients (providing psychological support, treating underlying organic illnesses, prescribing psychotropic medications, and referring those who need specialist attention), a position the researcher currently still holds.

1.9 STRUCTURE OF THE STUDY

In Table 1.3 the structure of this research study is presented.

TABLE 1.3: STRUCTURE OF THE STUDY

CHAPTER	TITLE	CONTENTS
1	Orientation to the study	This chapter provides the preface to the study. Information on the specific study context, the research problem, the purpose of the study, the research questions and the significance of the study are provided. The key concepts, study outline, the design and methods used, the ethical considerations, and the scope of the study are presented.
2	The literature review	In the literature review alcohol use in Ethiopia is discussed with special reference to psychiatric in-patients.
3	Research design and methods	In this chapter an account of the research design and methods, the sampling procedure, data collection method and process, and the measures taken to improve the validity and reliability of the study findings is given.
4	Presentation and description of the study findings	This chapter is a deliberation on the data analysis procedures employed, and the study findings and their correlation and contrast to the findings of the literature reviewed.
5	Summary, conclusion and recommendations	A brief summary of the findings is presented. Conclusions generated in line with the research questions and the problem statement are drawn, and recommendations are made based on the findings.

1.10 SUMMARY

This chapter briefly highlighted the background of the study, the rationale for the study, the study objectives, and the research questions. The researcher also used this chapter to describe the design and method of this study and to address the ethical principles that guided the conduct of this study. In Chapter 2 available scientific literature regarding alcohol use is reviewed.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The scope of this chapter is to synthesise scientifically-based evidence regarding alcohol use in general with the focus remaining on alcohol use amongst psychiatric in-patients in a mental hospital in Ethiopia. Literature relevant to the topic was sourced from textbooks, published research articles, scientific reports, and other credible sources of scientific work and is presented. The purpose of a literature review is discussed followed by a description of various alcoholic beverages, the effects of alcohol, and patterns of alcohol use by the general population and by psychiatric in-patients are given. Factors associated with alcohol use are described with emphasis given to the Ethiopian context. A conclusion is given at the end of the chapter.

2.2 PURPOSE AND SOURCES OF THE LITERATURE REVIEW

A literature review is a 'further look' at what has previously been written on a particular subject and involves the critical examination and synthesis of existing reports (Joubert & Ehrlich 2007:66). According to Burns and Grove (2009:39), the literature review generates an understanding of what is known about a particular situation and the existing knowledge gaps. It is a compilation of resources that lays the groundwork for a study, provides a true picture of the underlying research, and provides a context for a new study (Joubert & Ehrlich 2007:68; Polit & Beck 2008:106). The literature review in this study centred on the alcohol use of psychiatric in-patients in an Ethiopian hospital and aspects related to mental disorders in the Ethiopian context.

The sources reviewed consisted of mainly primary sources and, to a limited extent, secondary sources. Primary sources are written by "individuals who originated the ideas published" while secondary sources "summarise or quote content from primary sources" (Burns & Grove 2009:93). Interpretations are influenced by an author's perceptions and bias. The use of secondary sources may increase the likelihood of errors and

misinterpretation of the information conveyed in the primary source (Burns & Grove 2009:93). Secondary sources may also fail to provide adequate details about the information in the primary source (Polit & Beck 2008:107). Hence, there was limited use of secondary sources in this study.

The literature reviewed for this study included medical and research textbooks, relevant journals, WHO publications, and appropriate scientific articles on the internet. The search for publications was made through computerised search engines, namely Google, Google scholar, PubMed, Medline, African Journals Online (AJOL), African Journal of Drug and Alcohol Studies, and PsycInfo. The Ethiopian Journal of Health Development (EJHD), the Unisa library and WHO websites were also consulted. The terms used for search included 'alcohol use and Ethiopia', 'alcohol use and mental disorders', 'alcohol use and psychiatric in-patients', and 'alcohol use and associated factors'. The sources included those published in 2000 and onwards in order to ensure currency of literature. Older sources were only incorporated if their inclusion was found to be important or relevant.

2.3 OVERVIEW OF ALCOHOLIC BEVERAGES

Alcoholic beverages have been a part of humankind's social life for millennia (WHO 2005:1). In fact, in the Old Testament (Genesis 9:20-21) of the Bible it is written that Noah planted a vineyard on Mount Ararat after he had landed there and drank the wine till he became drunk (*The Holy Bible* 1999). Among the Greeks in 336-323 BC the Macedonians regarded excessive drinking as a sign of masculinity; sparkling champagne made its debut in France around 1668 while at the beginning of the eighteenth century legislation to encourage the use of grain for distilling spirits was passed in England (*Hanson* 2013).

The Standard International Trade Classification (SITC) of the United Nations Statistics Division (2006) classifies alcoholic beverages into four main categories, namely wines, fermented beverages not elsewhere specified such as cider, beers, and spirits (SITC 2006:20-21). Alcohol can be produced from "almost any seed, plant or crop" (WHO 2010c:105). Wines (alcohol content 11-19%) are made by fermenting grapes; beers (alcohol content 2-5%) are brewed by fermenting malted barley and occasionally other

cereals to which hops are added; cider (alcohol content 1-17%) is made from fermented apple juice; and spirits (alcohol content 24-90%) are produced by the distillation of fermented raw materials that include sugar cane (as in rum), grapes (as in brandy and cognac), cereals such as barley, maize, oats, rye and wheat (as in whiskey and gin), and potatoes (as in vodka) (*Encyclopaedia Britannica* [EB] [s.a.], sv “alcoholic beverage”; EB [s.a.], sv “liquor”; WHO 2000:65).

Wine constitutes the largest proportion of alcohol consumed in some European countries and the South American wine growing countries of Argentina and Chile (WHO 2011:6-7). Beverages other than wine, for example, fortified wines, rice wine or other fermented beverages made of sorghum, millet, or maize, beer and spirits are consumed mostly in sub-Saharan Africa (WHO 2011:6-7) which has the highest share in total recorded consumption in the African Region with 48.2% (WHO 2011:7). But, as the WHO (2011:5) notes, in poorer or developing countries a variety of alcoholic beverages are often homemade or illegally produced and is therefore cheaper and widely available to the local populations. For instance, a study with informants at liquor outlets in Botswana indicated that several types of homemade alcoholic beverages with local ethnic names (made from cereals, fruits, malt and sugar) are popular among a number of ethnic groups, the youth, the poor, the unemployed, and labourers because they are cheap and commonly available (Pitso 2007:93-101).

In Ethiopia, as in many developing countries, many types of homemade or locally produced alcoholic beverages continue to be the main available beverage types (WHO 2004a:7, 19-21). Such locally produced alcoholic beverages are often outside the SITC's (2006) known and accepted categories which are beer, wine, cider and spirits as mentioned before. Moreover, these locally produced alcoholic beverages are outside the control of the local governments (WHO 2004a:7). Besides, Ethiopia manufactures a variety of industrial alcoholic beverages for local use and still imports several other brands from abroad (*Legal aspects ...* 2011). Fekadu, Alem and Hanlon (2007a:40) explain that while the industrial production of alcoholic beverages has increased in Ethiopia in recent years, various traditional alcoholic beverages are increasingly homemade and available for use in the country (WHO 2004b:3-4).

The most common homebrewed alcoholic beverages in Ethiopia are *tella*, *tej*, and *araki* (Fekadu et al 2007a:40). According to Selenius (1971) (cited in the WHO 2004a:20), *tella* is an Ethiopian homebrewed beer. It is brewed with germinated barley or wheat and *gesho* (an evergreen shrub) leaves. The alcohol content of *tella* is usually around 2-4%. Filtered *tella* has a higher alcohol content ranging from 5% to 6%. *Tej* is an indigenous honey wine that is home processed but also commercially available. It is prepared from honey, water and the leaves of the *gesho* shrub. Good quality *tej* is yellow, sweet, effervescent and cloudy due to the content of yeasts. The mean alcohol content of *tej* is between 7% and 11% (Bahiru, Mehari & Ashenafi 2001:104-108). *Araki*, of which the alcohol content is 45%, is a traditional spirit distilled from fermented cereals. In the villages distillation is carried out with primitive equipment made of gourds and wood. The local beer *tella* can also be distilled to produce *araki*, and the *araki* can be redistilled to yield even higher alcohol content (WHO 2004b:3-4).

2.4 EFFECTS OF ALCOHOL ON THE BODY AND BRAIN

Next to caffeine, alcohol is the second most commonly used psychoactive substance globally. However, as alcohol has an initial high concentration of acetaldehyde in the brain, symptoms of intoxication and deterioration of behaviour will mostly ensue immediately in the drinker (*Alcohol and mental health* 2007; Sadock & Sadock 2007:394). When alcohol is continually used not only do physiological changes occur in the brain and nervous system, but psychologically the person can have an increased tendency towards addiction.

Harmful drinking is a major determinant for neuropsychiatric disorders such as alcohol use disorders, epilepsy and other non-communicable diseases, for example, cardiovascular diseases, cirrhosis of the liver as well as some types of cancers (*Alcohol* 2013; WHO 2011:22). Longo et al (2012:5111) explain that alcohol alters nearly every one of the neurochemical processes in the brain. Changes that occur in the brain, body, and life of a person who uses alcohol (or other drugs for that matter) include not only physiological and psychological changes but also occupational changes (struggling to maintain one's career) and, as the addiction grows, social changes occur where one loses friends and social support. The problem begins when one uses alcohol over an extended period of time because the body begins to adapt to the regular intake of alcohol, this eventually leads to tolerance: the body needs a greater intake of alcohol to

reach the desired effect or altered state of mind and the excessive and harmful consumption of alcohol inevitably follows.

The acute effects of alcohol on the brain depend on the dose, the rate of increase in plasma, the concomitant presence of other drugs, and past experiences with alcohol. Alcohol use has a spectrum of immediate effects ranging from slight intensification of moods at 0.02 gram/decilitre (g/dl) of blood alcohol level (that is after one to two drinks) to death at 0.40 g/dl of blood alcohol level (refer to Table 2.1) (Longo et al 2012:5111-5112).

TABLE 2.1: THE ACUTE EFFECTS OF BLOOD ALCOHOL LEVELS IN THE ABSENCE OF TOLERANCE

BLOOD LEVEL (gram/decilitre)	USUAL EFFECT
0.02 g/dl (following ingestion of two standard drinks)	<ul style="list-style-type: none"> • Decreased inhibitions • A slight feeling of intoxication
0.08 g/dl	<ul style="list-style-type: none"> • Decrease in complex cognitive functions and motor performance
0.20 g/dl	<ul style="list-style-type: none"> • Obvious slurred speech • Motor in-coordination • Irritability • Poor judgement
0.30 g/dl	<ul style="list-style-type: none"> • Light coma • Depressed vital signs
0.40 g/dl	<ul style="list-style-type: none"> • Death

(Longo et al 2012:5111-5112)

2.5 TOOLS FOR MEASURING ALCOHOL USE

Alcohol use can be measured by using a number of research tools: the Composite International Diagnostic Interview (CIDI), Alcohol Use Disorder and Diagnostic Interview Schedule (AUDADIS) and Schedules for Clinical Assessment in Neuropsychiatry (SCAN), the Severity of Alcohol Dependence Questionnaire, the Cut down, Annoyed, Guilty, Early-morning (CAGE) questionnaire, and the Alcohol Use Disorder Identification Test (AUDIT) (refer to details of alcohol measurement tools in Chapter 3).

Three categories of alcohol use based on AUDIT scores exist, namely abstinence, non-hazardous alcohol use, and alcohol use disorder. The latter includes hazardous alcohol use, harmful alcohol use, and probable alcohol dependence. The cut-offs for these AUDIT scores were identified by the scale authors, which were found to have “a sensitivity of about 0.95, a specificity of more than 0.80, and a test-retest reliability of 0.86” (Babor et al 2001:11). The concepts ‘abstinence’, ‘non-hazardous alcohol use’, ‘hazardous alcohol use’, ‘harmful alcohol use’ and ‘alcohol dependence’ are explained next.

2.5.1 Abstinence

‘Abstinence’ refers to zero alcohol consumption. An AUDIT score of 0 in both sexes indicates abstinence or a non-drinker (Babor et al 2001:21-22).

2.5.2 Non-hazardous alcohol use

‘Non-hazardous alcohol use’ refers to drinking that is within legal and medical guidelines and is not likely to result in alcohol-related problems. The non-hazardous drinking level is no more than 20 g of alcohol per day, five days a week, but it is recommended that two non-drinking days are included (Babor et al 2001:19, 32). AUDIT scores of 1-6 in females and 1-7 in males indicate non-hazardous alcohol use (Babor et al 2001:19). A psychiatric in-patient is viewed as a non-hazardous alcohol user if he or she is only a social drinker.

2.5.3 Alcohol use disorder

The co-occurrence of alcohol use disorder and mental disorders is “often marked by greater functional impairment, self destructive behaviour, and being refractory to treatment” (Vega, Sribney & Achara-Abrahams 2003:1057). At the same time, heavy drinking can “co-exist with, contribute to, or result from various mental disorders” (Shivani, Goldsmith & Anthenelli 2002:90). Such heavy drinking could result in the following psychiatric consequences: alcohol-related psychiatric symptoms and signs (sadness, irritability, nervousness, impaired judgement, and aggressiveness), alcohol-induced psychiatric syndromes (mental disorders occurring as a result of heavy drinking such as alcohol-induced psychosis that typically improve by themselves within several

weeks of abstinence), and alcohol use disorders with co-morbid independent mental disorders (alcohol use disorders associated with several mental disorders that develop independently of the heavy drinking such as independent major depression) (Shivani et al 2002:91-92).

'Alcohol use disorder' includes hazardous alcohol use, harmful alcohol use, and alcohol dependence (Babor et al 2001:19). A psychiatric in-patient is viewed to have an alcohol use disorder if she or he has a pattern of drinking resulting in public health problems such as job loss, divorce, violence, injuries or crimes, that endanger family and societal wellbeing; or if the pattern of drinking of the psychiatric in-patient has resulted in physical and/or mental consequences to her- or himself.

2.5.3.1 Hazardous alcohol use

'Hazardous alcohol use' is a pattern of alcohol consumption carrying with it a risk of harmful consequences to the drinker. These consequences may be damage to the drinker's health, physical or mental, or they may include social consequences to the drinker or others (Babor & Higgins-Biddle 2001:5-6). AUDIT scores of 7-15 in females and AUDIT scores of 8-15 in males indicate hazardous alcohol use (Babor et al 2001:19-20).

2.5.3.2 Harmful alcohol use

'Harmful alcohol use' is defined as a pattern of drinking that is already causing damage to the drinker's health. The damage may be either physical, for example, liver damage from chronic drinking, or mental damage such as depressive episodes secondary to drinking. Adverse social consequences are also included among the harms caused by alcohol (Babor & Higgins-Biddle 2001:5). AUDIT scores of 16-19 in both sexes indicate harmful alcohol use (Babor et al 2001:20).

2.5.3.3 Alcohol dependence

'Alcohol dependence' is a cluster of behavioural, cognitive and physiological phenomena that may develop after repeated alcohol use (Sadock & Sadock 2007:382; WHO 2000:101). Typically, these phenomena include a strong desire to consume

alcohol, impaired control over alcohol use, a physical withdrawal reaction when alcohol use is discontinued, an increased alcohol tolerance, a higher priority given to drinking than to other activities and obligations, and persistent drinking despite the harmful consequences. To diagnose alcohol dependence, “three or more of these phenomena should have occurred together for at least one month or, if persisting for periods of less than one month, should have occurred together repeatedly within a 12-month period” (Babor et al 2001:24). AUDIT scores of 20-40 in both sexes indicate possible alcohol dependence (Babor et al 2001:20).

2.6 ALCOHOL USE IN ETHIOPIA

Alcohol use in Ethiopia has been explored by different research studies and surveys. A national young adult survey conducted in 2009 in the country reported that 36.4% of males 12-24 years old and 17.5% of females of the same age group (12-24 years) drank alcohol. According to the same survey, 8% of males aged 12-24 years and 2% of females aged 12-24 years drank alcohol at least two or more times a week, and 4% of alcohol drinkers reported that they had been drunk in the three months preceding the survey (United Nations Population Fund [UNFPA] 2010:33). In this regard, Reda et al's (2012:213) research study conducted in east Ethiopia showed that 10% of high school pupils aged 15-25 years had consumed alcohol in the 30 days preceding the study. Seme, Hailemariam and Worku (2005:119) point out that among people visiting the human immunodeficiency virus (HIV) testing and counselling centres in Addis Ababa, the overall prevalence of alcohol use was 45%; of this percentage 55% had consumed alcohol in the previous year. Furthermore, the prevalence of alcohol use among antiretroviral treatment attendees in the Jimma University Hospital in south-west Ethiopia was 50% (Mitiku, Mossie & Fekadu 2012:185). In their study among the Borana semi-nomadic community in southern Ethiopia, Beyero, Alem, Kebede, Shibire, Desta and Deyessa (2004:111) found that 1.6% of the general population in the community had alcohol dependence.

The researcher's investigation of the literature sources with regard to alcohol use and psychiatric in-patients in Ethiopia revealed that research studies on this topic were scarce. In fact, the studies found that related to psychiatric in-patients and alcohol – which had all been conducted in the only mental hospital in Ethiopia – investigated patients with specific psychiatric disorders and alcohol use with very little attention paid

to the level of alcohol consumption among all the patients in the whole hospital or the consequences of drinking. Bimerew, Sonn and Kortebout (2007:77) did a self-report study with specifically only readmitted schizophrenic patients in this mental hospital. According to their self-reports the prevalence of alcohol use among them was 25.6%. However, the families and caregivers of these readmitted patients reported that all of the patients with schizophrenia (100%) used alcohol (Bimerew et al 2007:79).

In all of the aforementioned studies conducted in Ethiopia the alcohol use of the respondents was measured by employing self-reported alcohol consumption. However, according to a South African study, when compared to the AUDIT, self-reported alcohol consumption had a sensitivity of only 18.5%, thus indicating that direct questions about alcohol use were less sensitive than AUDIT questions in detecting alcohol use disorders (Bekker & Van Velden 2003:13). To the knowledge of the researcher, no previous study in Ethiopia utilised AUDIT to measure alcohol use in the country or, more specifically, alcohol use among psychiatric in-patients.

2.7 FACTORS ASSOCIATED WITH ALCOHOL USE

Under this section the antecedents of alcohol use that possibly predict alcohol use is discussed. According to Sadock and Sadock (2007:388), the antecedents of alcohol use include the following:

- mood states, withdrawal states, and expectations
- early learning, alcohol experience, genetic endowment, and development events
- licensing laws, availability of alcohol, social pressures, and demographic variables
- peer groups, family interactions, and parental alcohol use

Besides, tobacco use is also discussed as an additional factor associated with alcohol use (WHO 2004c:5-6).

2.7.1 Mood states, withdrawal states and expectations

A commentary by Flisher (2006:73) indicated that, at the person level, the harmful use of alcohol can be influenced by personal factors such as a low self-esteem and/or a

depressed mood. Research studies conducted in different parts of the world showed that alcohol consumption could be associated with depression. Among patients in treatment for alcohol use disorder, the prevalence of major depression was higher than in the general population; a higher prevalence of alcohol use disorders had also been documented for patients in treatment for depression (WHO 2004a:43). For instance, according to the WHO (2004c:183), in the United States of America (USA) lifetime rates of major depressive disorder were found to be between 38% and 44% in people with alcohol dependence compared with only 7% in non-dependent individuals. Further, approximately 80% of people with alcohol dependence had had symptoms of depression in the two decades preceding the study.

Alwan, Viswanathan, Rousson, Paccaud and Bovet (2011:85) noted that seriously considering attempting suicide (one possible indicator of a depressed mood) was significantly associated with alcohol use among female adolescents aged between 11 and 17 years in the Seychelles. Conversely, Alati, Kinner, Najman, Fowler, Watt, and Green (2004:466-468), who conducted a study on gender differences in the relationships between alcohol, tobacco and mental health in patients attending emergency treatment in Australia, found that in both females and males depression and anxiety were significantly associated with harmful alcohol use than any other AUDIT category.

In their study on alcohol consumption and suicide mortality among Japanese men aged 40-79, Nakaya, Kikuchi, Shimazu, Ohmori, Kakizaki, Sone, Awata, Kuriyama and Tsuji (2007:507) established that the risk of suicide was consistently increased among heavy drinkers as compared to abstainers and light drinkers. A household survey in Sao, Paulo, Brazil also revealed that heavy and frequent drinkers were twice as likely as abstainers to present with lifetime depressive disorders in both males and females (Silveira, Siu, Wang, Viana, Andrade & Andrade 2012:209). In Ethiopia itself the risk of depression was found to be significantly higher for non-heavy drinkers, infrequent heavy drinkers, and heavy drinkers than lifetime abstainers (Hailemariam, Tessema, Asefa, Tadesse, & Tenkolu 2012:23). These authors conducted a study on the prevalence of depression and associated factors in Ethiopia using data from the Ethiopian national health survey.

After regular consumption of alcohol over a prolonged time, if an individual stops or reduces the amount of alcohol consumption, a withdrawal state can ensue (Sadock & Sadock 2007:384). Early symptoms of an alcohol withdrawal state include severe shaking, sweating, weakness, agitation, headache, nausea and vomiting, and rapid heart rate (WHO 2004c:71). Such an alcohol withdrawal state urges one with these symptoms to self-medicate him- or herself with alcohol (Sadock & Sadock 2007:388). If the individual presents with any of the aforementioned symptoms and does not drink alcohol, or if he or she does not seek treatment, the alcohol withdrawal can be complicated by seizures and delirium tremens – a condition characterised by severe agitation, tremor, abnormal perceptions and thoughts, confusion and life-threatening autonomic instability (Longo et al 2012:359, 5116). Untreated delirium tremens has a mortality of up to 30% (WHO 2009:52).

Expectations about the rewarding effects of drinking, for example, thirst quenching, enhancing enjoyment, facilitating relaxation, providing pharmacological pleasure, increasing the pleasure of eating, approval from friends, and terminating noxious states such as depression can influence a person's decision to use alcohol (Hanson 2013; Sadock & Sadock 2007:392). Smit, Pretorius and Joubert (2009:17) conducted a study with medical students (N=371) at the University of Free State in Bloemfontein, South Africa, on their view of being at risk due to drinking behaviour. The authors found that the most frequent responses given as a reason for drinking alcohol frequently were the following: 24.8% in response to emotional factors (6.7% when depressed about things in general; 12.7% when feeling tense; 5.4% when letting him- or herself down), 26.1% when with friends or when wanting to increase enjoyment, 29.1% when wanting to celebrate with a friend, and 21.3% to socialise.

A nationwide study among adolescents and adults in the Netherlands showed that adolescents and adults who indicated drinking for social or enhancement reasons were more likely to drink for coping or conformity reasons. Drinking motives were also positively related to expectancies concerning the positive effects of drinking and the negative effects of drinking, and negatively to self-efficacy (one's ability to quit drinking after having maximum of two drinks) (Engels, Wiers, Lemmers & Overbeek 2005:155-156). Moreover, the authors found that positive outcome expectancies were related to frequency of drinking and heavy drinking (Engels et al 2005:156). Bimerew et al (2007:80) reported that patients with schizophrenia used alcohol in order to suppress

the side effects of psychotropic medications such as drowsiness, inactivity, and a low mood.

2.7.2 Early learning, alcohol experience, genetic endowment, and development events

In their study among young men (18-20 years) entering the US Marine Corps, Young, Hansen, Gibson and Ryan (2006:1209-1210) discovered that those who started drinking at an early age (13 years or younger) were more likely to be identified as risky drinkers when compared to peers who started drinking at a later age (14-20 years). In fact, surveys done in the USA and Costa Rica indicated that the earlier the age at which an individual resumes drinking the more likely it is that she or he becomes alcohol dependent later in life (Dewit, Adlaf, Offord & Ogborne 2000:747; Jernigan 2001:3). The researcher could trace no study in Ethiopia that had explored early learning as a predictor of alcohol use.

One can experience improvement of mood and social adjustment after light to moderate drinking. This can help a social drinker to cope with stress or other negative emotional effects (*Alcohol and mental health* 2007). Such an experience following alcohol consumption can influence one to continue drinking alcohol later in life. The significant role that previous alcohol experience play in an individual's habit to use alcohol for coping with problematic situations, is supported by the findings of a survey done by O'Malley, Johnston and Bachman (1998:90) in the USA. In an adolescent survey these authors found that one-fourth of Grade 12 pupils who had ever consumed alcohol indicated that they drank because of boredom or because alcohol helped them escape their problems.

Although it is not clear whether genetic risk is a major factor in the initiation of alcohol drinking or drinking during adolescence, alcoholism can be genetically influenced (Flisher 2006:73; Sadock & Sadock 2007:393; WHO 2004c:132). Studies in various parts of the world revealed that the heritability estimates of predisposition to alcohol dependence constituted 51-65% in females and 48-73% in males. Heritability estimates for the frequency of alcohol consumption were found to be 66% in females and 42-75% in males; and heritability estimates for average quantity consumed during drinking were found to be 57% in females and 24-61% in males (WHO 2004c:132-133).

Lamprey (2005:5) reports that in Ghana there was a tendency for non-abusers of substances, including alcohol, to have stayed with both parents when compared to substance abusers. In animal models, mother-reared rhesus monkeys (monkeys who spent their first six months of life with their mothers) were reported to increase their alcohol consumption significantly during social separation when compared with those rhesus monkeys that were reared with constant access to their age mates, but not to their mothers or other adults, during their first six months of life (Higley, Hasert, Suomi & Linnoila 1991:7263). This indicates the possibility that there may be a contribution of developmental events to alcohol use. In Ethiopia, Deressa and Azazh (2011:660) found that undergraduate medical students who shared that their fathers drank alcohol were more likely to have drunk alcohol in the year preceding the study when compared to those students whose fathers did not drink alcohol.

2.7.3 Licensing laws, availability of alcohol, social pressures, and demographic variables

The Ethiopian government has no control over the production of locally brewed alcoholic drinks (WHO 2004a:20). As a result, it is difficult to estimate the total amount of alcohol production and consumption in Ethiopia. On the contrary, according to the WHO 2004 Global Status Report on Alcohol, the Ethiopian law bans the advertisement of spirits on national television and national radio. Ethiopia has no policy of special license for production or sale of alcoholic beverages, and no special hours, days or places of sale for it either. There are also no restrictions on advertising of any type of alcoholic beverages on print media or billboards (*Alcohol policy 2004*).

Indeed, if one makes a tour in a number of towns in Ethiopia, one can easily be drawn in by the multitude advertisements of beers, wines, spirits, or traditional beverages painted in bright colours along the streets. It is oftentimes promoted by well-known celebrities in the country that tempt one to quench one's thirst with alcohol (researcher's personal observation). Advertisements of alcoholic beverages have "a tendency of recruiting new drinkers and exacerbating drinking habits of those already involved in drinking" (*Legal aspects ... 2011*). In support of this statement, Anderson, De Bruijn, Angus, Gordon and Hastings (2009:232-238) found the impact of alcohol advertising and media exposure on adolescents' (18 years or younger) alcohol use significant.

These authors concluded that ownership of alcohol branded merchandise such as clothing, headwear, jewellery, key chains, shot glasses, posters, and pens impacted hugely on initiating binge drinking (consuming greater or equal to five drinks in a row). They further ascertained that alcohol exposure in films predicted alcohol use; brand recognition, brand recall, and a high receptivity to alcohol marketing significantly predicted alcohol initiation; that each additional alcohol advertisement seen increased the number of drinks consumed; exposure to alcohol concession stands at sports or music events predicted drinking onset for non-drinkers and, finally, the 'liking' of alcohol adverts predicted an increased frequency of alcohol use. Cognisant of this fact, alcohol producing industries utilise elegant advertisement techniques spending significant sums of money that include linking alcoholic brands to sport and cultural activities, being engaged in sponsorships to position alcohol as essential to enjoyment, and using the social media to advertise alcoholic brands to persuade citizens, especially the youth, to use alcohol (WHO 2010a:15). In line with this, Jernigan (2001:13) states multinational corporations in developed countries "produce and distribute different brands of alcoholic beverages to developing countries like Ethiopia as a commodity with globally coordinated advertising".

The availability of alcoholic beverages, in other words the quantity of alcoholic beverages at the disposal of populations and the factors affecting these quantities, affect the pattern and volume of alcohol use by citizens (Sadock & Sadock 2007:388; WHO 2010a:14). Flisher (2006:73) adds that inadequate recreational facilities in a country could contribute to the citizens' harmful drinking habits. Bimerew et al (2007:79) concluded that the free availability of alcohol in Ethiopia influenced schizophrenic in-patients to increase alcohol consumption on a daily basis. The availability of alcoholic beverages can, however, be controlled by restricting alcohol sales as well as its consumption by people below a legal drinking age and by government control of alcohol distribution and sales (WHO 2011:43). The Ethiopian alcohol law legally binds regulations related to alcohol advertising, product placement, alcohol sponsorship, and sales promotion for wines and spirits. This law also levies excise tax on beer, wine, and spirits and labels the national minimum legal age for on-premise sale of beers, wines, and spirits as 18 years. Although the Ethiopian alcohol law has restrictions for the time and location of the sale of wines, it does not restrict the time and location for beer and spirits sales (*Ethiopia* 2011).

In several developing countries – including Ethiopia – drinking alcohol and intoxication among adult males are more socially acceptable than that of the females and may have important social significance, such as maintaining friendships or coping with stressful situations (Patel 2007:89). On the other hand, according to Ayers, Chambers, Hofstetter, Hughes, Reyes, Kang, Irvin and Hovell (2011:93), since drinking is common in females' social networks, lifetime alcohol use in females can be ascribed to the fact that they are encouraged rather than discouraged by friends to drink more. Ayers et al (2011:93) add they found discouragement from friends, parents, siblings, and sons or/and daughters was two times more effective than discouragement from spouses to lower the probability of any lifetime drinking in females. Deressa and Azazh (2011:660) also found in Ethiopia that undergraduate medical students whose friends consumed alcohol during the study period had been more likely to consume alcohol in the year preceding the study as compared to those whose friends did not consume alcohol. Among high school pupils (N=1890) in eastern Ethiopia, 60.5% (n=1143) of the drinkers drank alcohol with their friends while 32.1% (n=119) drank with their parents (Reda et al 2012:213). These findings highlight the role of social pressures in alcohol use.

In a survey among 1 700 adults from a semi-nomadic population at the southern border of Ethiopia, alcohol dependence was found exclusively among men (Beyero et al 2004:111-112). The results of Seme et al's (2005:120) study involving participants 15 years and older in Addis Ababa, Ethiopia showed that the males were more significantly and positively associated with drinking alcohol after controlling for confounding variables. Similarly, it was found among outpatients attending rural and urban health centres in Kenya that males were more than twice as likely as females to use alcohol (Othieno, Kathuku & Ndeti 2000:594). In addition, Lee, Chou, Cho, Park, Dawson and Grant (2010:300) discovered in their study on the prevalence and correlates of alcohol use disorders in the USA and Korea that greater odds were generally observed for 12-month alcohol dependence among adult males than adult females in both Americans and Koreans. Such gender differences in drinking behaviour might arise because adult females have lower rates of first pass metabolism of alcohol than adult males because there is a 70 to 80 per cent higher activity of gastric alcohol dehydrogenase in non-alcoholic adult males than in non-alcoholic adult females (Frezza, DiPadova, Pozzato, Terpin, Baraona & Lieber 1990:97). This may explain the need in adult females to consume less alcohol than their male counterparts and still derive the same effects.

Similarly, since adult females are more likely than males to experience unpleasant acute effects from alcohol (such as hangover symptoms) due to the smaller volumes of body water in which alcohol is distributed in the females, adult females' drinking may be inhibited (WHO 2005:3).

In their study in Mitchell's Plain, Cape Town, South Africa, Hamdulay and Mash (2011:86) observed that alcohol was the most common substance used by adolescent students attending high school (Grades 8 and 11). Studies done in different parts of the world indicate that adolescents who use alcohol can have individual physical or psychological problems, reduced school performance, relationship or delinquency problems, unwanted sexual experiences or unprotected sex (Jernigan 2001:6-7). Adverse consequences as a result of heavy alcohol use can also be more common in adolescents than adults due to inexperience with alcohol and a smaller muscle mass in adolescents.

A countrywide study with adolescents between 11 and 17 years old in all the private and public schools in the Seychelles showed that the prevalence of alcohol drinking was higher in males than in females and increased with age (Alwan et al 2011:85). Similarly, the national young and adult survey in Ethiopia indicated that alcohol use increased with age: 31% of young males aged 15-17 drank occasionally or regularly and 46% of young males aged between 21 and 24 drank occasionally or regularly (UNFPA 2010:33). A survey among young adults between 12 and 24-years old in seven of the nine regions in Ethiopia revealed that 8% of males and 2% of females reported drinking alcohol two or more times in a week (UNFPA 2010:33). In their study among the youth aged 12-18 years in Israel, Isralowitz, Shpiegel, Reznik and Laytin (2009:275) found that males were significantly more inclined to drink alcohol than females while among undergraduate medical students at the Addis Ababa University in Ethiopia being male was strongly associated with alcohol use in the 12 months preceding the study (Deressa & Azazh 2011:660).

Odejide (2006a:30) writes that "while Islam forbids the production, distribution, and use of alcohol, Christianity is ambivalent on the subject". The findings in Deressa and Azazh's (2011:660) study among undergraduate medical students in Ethiopia support Odejide's (2006a) statement. These authors found that the Orthodox Christian religion was strongly associated with alcohol use in the year preceding the study, and the odds

of alcohol consumption in the year preceding the study among Muslim students was significantly lower when compared to students of other religions.

A national young and adult survey reported that drinking alcohol was much more common in rural Ethiopia than in urban areas: 11% of rural youths (12-24 years) drank during at least two occasions per week compared to the 4% urban youths in the same age range (UNFPA 2010:33). It is possible that this phenomenon can be linked to the fact that cheaper traditional alcoholic beverages are more accessible in rural than in urban areas. Also, the same survey indicated that rural alcohol consumers drank more frequently than urban consumers. On average in the previous month rural males consumed 7 drinks and rural females 6 drinks whereas urban males consumed 5 drinks and urban females only 2 drinks (UNFPA 2010:34). Contrary to this finding, Peltzer et al (2011:35) found in South Africa higher rates of alcohol use were recorded in urban than in rural areas for both males and females, and that urban residency was more likely associated with harmful or hazardous alcohol use among females.

Peltzer et al (2011:35) further report that the prevalence of harmful or hazardous alcohol use in South Africa is similar across educational and income levels. On the other hand Hauli et al (2011:240) state in north Tanzania most (84.2%) of the psychiatric patients who used alcohol had formal employment. According to Peltzer et al (2011:35), in South Africa among adults 15 years and older, a low income was associated with hazardous or harmful alcohol use in males, while females with a higher income were not hazardous or harmful alcohol users. Consistent with this finding, Seme et al (2005:120) found that having no other means of a monthly income was positively and significantly associated with alcohol use in Addis Ababa, Ethiopia. Also in Ethiopia it was noted that young people with no education engaged in drinking to a greater extent than those with higher levels of education (UNFPA 2010:33). This may indicate that it is crucially important to educate young people in Ethiopia so that they can become knowledgeable about and understand the harm that alcohol use can cause.

2.7.4 Peer groups, family interactions, and parental alcohol use

A complex mix of environmental and genetic factors has been shown to put children of alcohol dependent parents at a higher risk of encountering problems related to alcohol use (WHO 2001:5). Flisher (2006:73) holds that relationship difficulties with family or

friends, and peer influence could be powerful factors in shaping beliefs and attitudes about harmful drinking. The study among adolescents in all public and private schools in the Seychelles indicated that truancy (absenteeism from school without permission) and poor parent supervision were positively associated with alcohol use (Alwan et al 2011:85). In studies done among high school students and undergraduate medical students in Ethiopia it was identified that students whose current friends used alcohol were more likely to use alcohol themselves (Deressa & Azazh 2011:660; Reda et al 2012:213). According to Deressa and Azazh (2011:660), in comparison to the students whose fathers who did not consume alcohol, the undergraduate medical students whose fathers did use alcohol drank more in the year before the study was conducted than the former.

2.7.5 Tobacco use

Tobacco use is “the practice where tobacco is burned and its vapours are either tasted or inhaled” (Abikoye & Fusigboye 2010:72). Manimunda, Benegal, Sugunan, Jeemon, Balakrishna, Thennarusu, Pandian and Pesala (2012:515) conducted a study with a representative sample of the 14-year and older populations on the Andaman and Nicobar Islands in India. Significant to the context of the current study, the findings indicated that the populations’ current alcohol use was directly associated with current tobacco use and alcohol dependence was a determinant of tobacco dependence. Pengpid et al (2011:2634) identified tobacco use as closely associated with hazardous or harmful alcohol use in both male and female urban hospital outpatients in South Africa while Silveira et al (2012:209) reported that lifetime tobacco dependence was associated with all drinking patterns (non-heavy drinkers, heavy drinkers or heavy and frequent drinkers) in Sao Paulo, Brazil. Deressa and Azazh (2011:660) found that smoking was strongly associated with alcohol use among undergraduate medical students at the Addis Ababa University in Ethiopia. It can thus be posited that alcohol consumption and tobacco use are closely linked behaviours.

2.8 CONCLUSION

Alcohol is globally a widely used drink. Ethiopians consume a variety of industrialised and homebrewed alcoholic beverages. The central nervous system effects of alcohol use range from a feeling of being intoxicated to death. Depression, alcohol use disorder,

one's genetic make-up, the national and local control over the production and sale of alcohol, and being of the male gender were found to be significantly associated with alcohol use. Other factors influencing the use of alcohol included following the Christian religion, unemployment, living in a rural residential area, peer influence, paternal alcohol use, and tobacco use.

The literature review identified that studies regarding alcohol use among psychiatric in-patients are scarce and the different studies in Ethiopia that were done regarding alcohol use did not make use of the AUDIT tool to measure the use of alcohol. The literature review underlined the necessity of a research study regarding psychiatric in-patients' alcohol use in a mental hospital in Ethiopia. The knowledge and insight gained by exploring the factors associated with alcohol use could be utilised to guide framing strategies to control alcohol use by psychiatric in-patients in the future.

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CHAPTER 3

RESEARCH DESIGN AND METHOD

3.1 INTRODUCTION

This chapter is an elaboration on the research design and method used in the study. A description is provided of the procedures followed and the justification for the research decisions. The research purpose, design, study setting, population and sampling, data collection and analysis, and ethical considerations are discussed.

3.2 PURPOSE

The purpose of this study was to explore alcohol use among psychiatric in-patients in a mental hospital in Ethiopia.

3.3 RESEARCH DESIGN AND METHOD

A research design is the blueprint for conducting a study and guides the researcher in planning and implementing the study in a way to achieve the intended objectives (Burns & Grove 2009:218). Joubert and Ehrlich (2007:77) refer to the study design as the “architecture” of the study because the choice of a study design determines the cost of the study, how the population is sampled, how measurements are collected, how data are analysed, and how the ethical considerations in the study are followed. By critically discussing the research design and method of this study, this chapter enabled the researcher to put the study within a defined procedural framework to achieve the research purpose and objectives and to provide answers to the research questions.

In this study an applied, quantitative, descriptive cross-sectional study design with an analytic component was conducted with psychiatric in-patients to explore alcohol use among psychiatric in-patients in a mental hospital in Ethiopia.

3.3.1 Applied studies

An applied study is a scientific investigation conducted to generate knowledge that will directly influence or improve clinical practice; the purpose of an applied study is to solve problems, make decisions, or to predict outcomes in real life practice situations (Burns & Grove 2009:34). This study falls into the category of applied study because it was motivated by finding a solution to a troublesome situation regarding mental health practice in Ethiopia. The troublesome situation was alcohol use among psychiatric in-patients. The researcher therefore needed to explore alcohol use among psychiatric in-patients in a mental hospital in Ethiopia. This was necessary as this situation was underexplored in this particular country.

3.3.2 Quantitative design

Polit and Beck (2008:763) describe a quantitative research design as the method of investigating a phenomenon by means of obtaining and analysing precise measurements and quantifications that relate to the phenomenon itself. Quantitative studies utilise a concise, objective, and systematic study process in which numerical data are used to obtain information and such numerical data could be analysed statistically to draw inferences about the universe. Quantitative studies generate knowledge based on determining how much of a given behaviour, characteristic, or phenomenon is present (Burns & Grove 2009:23). A researcher who utilises a quantitative research design usually repeats sequences of measurement and quantifications in an environment that is highly structured and controlled in order to obtain the numeric data needed to answer specified research questions (Polit & Beck 2008:66).

The researcher chose a quantitative research design for this study because it enabled him to provide statistical evidence on how the research variables were interrelated. This study was limited to a number of specified variables based on the literature reviewed. Conducting this study was an attempt to measure the relationships between alcohol use and the respective socio-demographic characteristics, clinical correlates, and perceptions of psychiatric in-patients in a mental hospital in Ethiopia.

3.3.3 Descriptive cross-sectional studies with an analytic component

In cross-sectional studies the study subjects are categorised by group and the data on the selected variables are collected at a single point in time with the intent to describe changes in the phenomenon across groups (Burns & Grove 2009:241). This study was considered a descriptive cross-sectional study with an analytic component because the main objective was to describe factors associated with alcohol use among psychiatric in-patients but the data allowed cross-tabulation to investigate association between the study variables (Joubert & Ehrlich 2007:78). Data were collected from the psychiatric in-patients using structured interview schedules and document analysis checklists at one point in time for each of the patients until all efforts to access the sampled patients were exhausted. While the data collection was on different days for the different patients, it was only collected once for each of the patients.

3.3.3.1 Strengths of cross-sectional studies

Cross-sectional studies have a number of strengths. It is relatively easy and not very expensive to conduct (Joubert & Ehrlich 2007:87) since they involve data collection at one point in time only. This study involved the collection of data over a short period of time and was thus economical. Cross-sectional studies are useful for evaluating the possibility of relationships between variables before more difficult or expensive studies are undertaken (Joubert & Ehrlich 2007:87). Hence, what had to be considered in the current study was the relationship between the characteristics of the psychiatric in-patients (socio-demographics, clinical correlates, and perceptions regarding alcohol use) and their alcohol drinking habits. Cross-sectional studies are important for assessing the health care needs of patients (Joubert & Ehrlich 2007:87). In this study the need for intervention regarding alcohol use of psychiatric in-patients was assessed. Subject attrition is only limited to non-response by sampled patients who may refuse to give consent to participate or to complete the interview schedule, as opposed to longitudinal studies which may be exposed to high dropout of study participants due to death, being lost to follow-up, or changing their minds at a later stage (Burns & Grove 2009:443). In this study there was no such risk of loss to follow up.

3.3.3.2 Limitations of cross-sectional studies

The main disadvantages of cross-sectional studies are that they provide weaker evidence about outcomes when compared to cohort and case-control studies. Cross-sectional studies also fail to establish causation and the temporal relationship between study variables (Joubert & Ehrlich 2007:87). These limitations had a minimal impact on this study as the study aimed to identify associations between the socio-demographics of the psychiatric in-patients and alcohol use, and between the psychiatric in-patients' clinical variables and alcohol use. The aim was also to obtain information regarding the perceptions of the psychiatric in-patients related to alcohol use and not necessarily the causes of their alcohol use.

3.4 RESEARCH METHOD

The research method refers to the techniques and practices used in the course of sampling, data collection, data processing, and analysis (Polit & Beck 2008:567).

3.4.1 Study setting, population and sample

The study setting, the population and the sample in this study are described in detail next.

3.4.1.1 Study setting

Polit and Beck (2008:568) define the study setting as “the physical location and conditions in which data collection takes place in a study”. This study was conducted in a mental hospital in Ethiopia for the care of psychiatric in-patients with mental disorders. The building of the mental hospital was constructed to provide general medical services when the country was occupied for five years by Italy during 1935-1940. Since the defeat of the Italians, the building has been functioning as a mental hospital (Alem, Desta & Araya 1995:55).

The hospital is situated in a slum area of Addis Ababa, the capital city, beside a large crowded market. This overcrowded market needs to be crossed in order to reach the mental hospital (Bimerew et al 2007:75). In 2011 the hospital had 10 psychiatrists, five

general doctors, more than 100 psychiatric nurses, 17 health officers, 78 laboratory technologists and technicians, and 10 pharmacists and it provided psychiatric services to as many as 10 000 cases a month (*Berhane* 2011). In general, extensive out-patient and limited in-patient treatment services are provided with the latter mostly dedicated to acute care (*Fekadu, Desta, Alem & Prince* 2007b:173). At the time the study was conducted there were three female wards and eight male wards, thus a total of 11 hospital wards with the number of beds (or patients) in each ward ranging from 14 to 25 per ward. General psychiatric in-patients are normally not admitted to Ward 11 as it a dedicated ward for the admission of patients with substance misuse. In this case substance misuse refers to “an improper use of substances deviating from approved social patterns” (*Sadock & Sadock* 2007:384) resulting in negative consequences such as “psychosocial problems, interpersonal problems, loss of employment, difficulty in participating in education, and legal problems” (*WHO* 2004c:1-2). These substances can include alcohol, tobacco, *khat*, marijuana, and others that, when taken, have the ability to change an individual’s consciousness, mood or thought processes (*WHO* 2010c:1). The study setting comprised of all 11 wards.

3.4.1.2 Population

The population is the entire set of individuals who meet the sampling criteria and to whom the researcher is interested in generalising the study findings (*Burns & Grove* 2009:343-344). The population for this study was the psychiatric in-patients in all 11 wards of the mental hospital. All the beds were occupied during the study period. The total population at the time of the study was 264 patients (N=264).

3.4.1.3 Sample

A sample is a subset of a population who has been selected to participate in a study (*Polit & Beck* 2008:765). For the purposes of this study, the researcher selected a sample of the population because it would have been cumbersome and logistically impossible with available research funds to interview the whole population. *Joubert and Ehrlich* (2007:94) point out that the sample in descriptive and cross-sectional studies should be representative of the whole population. According to *Forthofer, Lee and Hernandez* (2007:152), if a researcher uses larger random samples his or her confidence that the sample estimates are closer to the population parameters

increases. The sample was selected from the psychiatric in-patient population admitted to the mental hospital during the study period. The sampling procedure and sample size are described next.

3.4.1.3.1 Sample size

The sample size is the number of respondents who are necessary to achieve a statistically valid conclusion (Polit & Beck 2008:348). This requirement states the minimum number of respondents who have to be included in the sample (Polit & Beck 2008:413).

In order to estimate how large the sample size should be, the researcher used the formula of sample size for finite population, $n = \frac{z^2 \times p(1-p)}{d^2}$, where N indicated the total number of in-patients in the hospital and $n = \frac{z^2 \times p(1-p)}{d^2}$, where 'z' referred to the cut-off value of the normal distribution ($z=1.96$), 'p' was the anticipated alcohol use proportion among the psychiatric in-patients, and 'd' was the precision (margin of error) required on either side of the proportion ($d=0.05$). To calculate the sample size for the purpose of this study, 50% was taken as the anticipated alcohol use proportion among the psychiatric in-patients ('p') because the researcher could not trace previous available research studies indicating such proportion among psychiatric in-patients in Ethiopia. The hospital had 264 in-patients (N). When one uses this method of calculation, it yields $n=156$ (Fosgate 2009:5-6; Joubert & Ehrlich 2007:347).

Due to the limited scope of the dissertation, time and funds, one half (50%) of the sample size was found using this calculation, that is, $156 \div 2 = 78$ patients was arbitrarily chosen. An additional 10 (13%) was added to account for interviewing a minimum of eight patients from each ward. The final sample consisted of 70 patients and is discussed further under section 3.4.1.3.2 *Sampling procedure*.

The researcher was present during all interviews as well as during the gathering of information from the patients' medical files. The researcher ensured that every structured interview schedule and document analysis form had been completed properly. Thus, there was no need to add additional psychiatric in-patients to remedy

the situation of potentially unusable completed interview schedules and document analysis forms.

3.4.1.3.2 Sampling procedure

Sampling is the process of selecting a portion of the total population with which to conduct a study (Burns & Grove 2009:42). The researcher used a random sampling method to select the total number of psychiatric in-patients that were required for this study. Joubert and Ehrlich (2007:95) state if the researcher wishes to generalise the results of the study to the whole target of a population, random sampling is more appropriate than non-probability sampling. In any simple random sampling of individuals, the sampling unit is an individual. This means that each individual in the population has an equal chance of being selected for the sample. In order to achieve this, a sample frame that consists of the complete list of the whole population is required (Joubert & Ehrlich 2007:96).

In the current study a list of the bed numbers of all the psychiatric in-patients in each ward in the mental hospital was used as a sampling frame. First these patients' bed numbers in each ward were written down on pieces of paper that were then carefully and evenly folded into similar shapes and sizes. Next, they were placed on a tray and mixed. The researcher was blindfolded and one by one drew eight bed numbers from the tray (Joubert & Ehrlich 2007:96-97). If the psychiatric in-patient from the randomly selected bed number was not eligible or if she or he refused to participate, another bed number was drawn till the required number of respondents had been selected (Burns & Grove 2009:350-352). (The bed number of the non-eligible psychiatric in-patient or that of the eligible psychiatric in-patient who refused to participate was not placed back on the tray). This process was repeated for every ward in the mental hospital and the respondents were selected from each of the 11 wards. Fortunately, only one eligible psychiatric in-patient refused to participate but the researcher did encounter difficulty in selecting eight respondents from each ward because there were some who did not meet the sampling criteria. Pre-testing also had to be done in the same hospital as there was no other hospital in the country with characteristics similar to the one in which the study was conducted. In the end the researcher could select 70 respondents who were eligible to participate in this study. Of these selected respondents, 19 were female and

51 were male. None of the final 70 selected psychiatric in-patients refused to provide answers to any specific interview question or to complete the interview in this study.

3.4.1.3.3 Sampling criteria

Sampling criteria (also called eligibility criteria) refers to “criteria used by a researcher to designate the specific tributes of the population by which subjects are included for or excluded from participation in a study” (Burns & Grove 2009:344; Polit & Beck 2008:338). Such eligibility criteria include a list of characteristics essential for membership in the population (Burns & Grove 2009:344). Burns and Grove (2009:345) indicate that a study may have inclusion or exclusion sampling criteria or both. The inclusion and exclusion criteria for this study are highlighted next.

Inclusion criteria

- Psychiatric in-patients older than 18 years who had been admitted in the mental hospital at least two weeks and less than three months before the study was conducted.
- Psychiatric in-patients who were able to communicate in Amharic which is the national language of Ethiopia. The researcher wrote the interview schedule, consisting of three sections, and the consent form in English. These were then professionally translated from English into Amharic by an expert in English-Amharic translations.

Exclusion criteria

- Psychiatric in-patients younger than 18 years.
- Psychiatric in-patients who were not coherent and not emotionally stable during the study period.
- Medico-legal ‘patients’ whose cases were being investigated.

3.4.2 Data collection

Data collection involves the precise and systematic gathering of information relevant to the research purpose or the specific objectives of a study (Burns & Grove 2009:695). In this section the instrument development procedure, the data collection instruments, pre-testing, and the data collection procedure are discussed.

3.4.2.1 Instrument development procedure

The researcher self-designed two data collection instruments, namely a structured interview schedule and a document analysis checklist. The data collection instruments were developed based on literature reviewed and previously used standardised instruments. The draft data collection instruments were reviewed by two experts in this field, one of whom was a statistician and the other a registered psychiatrist. The feedback obtained from these two experts was incorporated into the data collection instruments so that the fewest but most relevant items were included, repetitions were avoided, and words or phrases with ambiguous or double meanings were replaced by non-ambiguous constructions (Joubert & Ehrlich 2007:116). This was recommended by the study supervisor. It was only after this had been done that the items were arranged in a logical order that would facilitate the data collection.

The English version of the interview schedule was translated into Amharic by a local expert English-Amharic translator. Two of the researcher's colleagues who had a good working language of both English and Amharic then translated this Amharic-translated version of the interview schedule back into English. This version was compared with the original English version for consistency of meaning (Burns & Grove 2009:424; Joubert & Ehrlich 2007:122).

The researcher read through a number of standardised alcohol use screening instruments designed to assess alcohol use globally (WHO 2000:101-102). In this study the interview-version Alcohol Use Disorder Identification Test (AUDIT) questionnaire was chosen to measure alcohol use. The original 10-item AUDIT questionnaire was modified by the researcher to elicit alcohol drinking habits in the three months before the study was conducted to help the respondents recall their alcohol use. Two questions were added to obtain data related to the type of alcoholic beverages consumed and to

collect information on who was concerned about the psychiatric in-patient's drinking, why the concerns arose, or when the concerns were forwarded.

The different screening instruments examined by the researcher are presented and briefly discussed next.

- **Composite International Diagnostic Interview, Alcohol Use Disorder and Diagnostic Interview Schedule, and Schedules for Clinical Assessment in Neuropsychiatry**

The Composite International Diagnostic Interview (CIDI), Alcohol Use Disorder and Diagnostic Interview Schedule (AUDADIS), and Schedules for Clinical Assessment in Neuropsychiatry (SCAN) have been designed for administration by lay interviewers. These semi-structured diagnostic instruments are based on lengthy interview schedules that lie outside the scope of many alcohol studies, especially those where limited resources can cap the number of questions that can be devoted to the consequences of alcohol use (WHO 2000:102). Lengthy interviews would raise problems in this study since it was anticipated that the psychiatric in-patients might not have had the patience to stay attentive during a long interview.

- **Severity of Alcohol Dependence questionnaire**

This questionnaire is widely used and has been translated into several languages. It has been adapted for use in community surveys as well as clinic samples. The 20 items take about five minutes to complete. It has been shown to have high test-retest reliability and high consistency with an experienced clinician's ratings of the degree of alcohol dependence. The questionnaire thus has the potential for use in national surveys where estimates of the prevalence of alcohol dependence at different levels are a major interest (WHO 2000:102). This instrument was not preferred because the major interest of this study was to screen alcohol use among the psychiatric in-patients and not alcohol dependence.

- **CAGE questionnaire**

The CAGE questionnaire was introduced in 1970 and since then it has been identified as one of the most efficient and effective alcohol screening instruments (Ewing 1984:1905). The CAGE questionnaire comprises only four questions that are numbered to form the acronym CAGE (Ewing 1984:1907; WHO 2000:102):

- C “Have you ever felt that you ought to cut down on your drinking?”
- A “Have people annoyed you by criticising your drinking?”
- G “Have you ever felt bad or guilty about your drinking?”
- E “Have you ever had a drink first thing or an eye-opener in the morning to steady your nerves or get rid of a hangover?”

In the CAGE questionnaire two or more affirmative answers may indicate a problem with alcohol use. However, the time frame for positive responses in the CAGE questionnaire is lifetime and, besides, in this questionnaire the frequency of drinking cannot be quantified (Zierau, Hardt, Henriksen, Holm, Jorring, Melsen & Becker 2005:616). Consequently, the CAGE questionnaire is less suitable to detect whether the problem drinking is current or past. It is also of little value for monitoring purposes, although it could be adapted for monitoring purposes by referencing the four questions instead to the past 12 months (Rodseth 2012:40). Hence, the researcher did not use the CAGE questionnaire in this study.

- **AUDIT**

The AUDIT includes ten questions relating to dependence as well as the quantity and frequency of consumption. The AUDIT has been employed in several countries in international collaborative research projects (WHO 2000:102). It is the only alcohol screening test specifically designed for international use. In the view of Babor et al (2001:10-28) it is brief, rapid, and flexible to use and has become increasingly valuable in the screening of individuals with alcohol-related problems. Babor et al (2001:10-13) advise that, when compared to other alcohol screening instruments, the AUDIT was determined to be the best screening instrument for the whole range of alcohol problems in primary care research, in the general population as well as in specific institutional groups such as hospital patients. Therefore, the researcher chose to use the AUDIT in

this study. The details of the AUDIT are elaborated on in **Section II: Questions on alcohol use (modified interview-version AUDIT questionnaire administered as a structured interview)** under sub-section **3.4.2.2 Data collection instruments**.

3.4.2.2 Data collection instruments

The data collection instruments that were used in this study included a structured interview schedule and a document analysis check as described below.

- **Structured interview schedule**

A structured interview schedule was used to collect structured data (refer to **Annexure G**). This structured data collection instrument mandated the researcher to ask similar questions to all the respondents and gather their responses. According to Joubert and Ehrlich (2007:107), structured interviews serve to follow a clearly structured format, preventing interviewers from placing their own interpretation on the questions and hence increasing the reliability of the information obtained. Structured interviews are easy to administer to respondents and also easy to analyse statistically. By using a structured interview, the researcher could assess multiple variables simultaneously with minimal risks of researcher and respondent biases. However, major drawbacks with structured interview schedules include the fact they are time consuming and costly (Polit & Beck 2008:336). The structured interview was preferred over a survey approach because raising a series of questions regarding alcohol to a group of subjects to describe their knowledge, attitudes or behaviours in a survey could have been influenced by recall and perceptions of social desirability (Joubert & Ehrlich 2007:188-189).

The interview schedule was organised into three sections: the socio-demographic characteristics, the modified AUDIT developed by incorporating the interview-version AUDIT questionnaire originally compiled by Babor et al (2001:17) and supplementary contextual questions, and four open-ended questions on the perceptions of the psychiatric in-patients regarding alcohol use. These three sections of the interview schedule are discussed next.

Section I: Socio-demographic variables (self-designed and administered as a structured interview)

Section I of the interview schedule contained ten items: seven closed-ended, multiple-choice items and three open-ended questions which elicited socio-demographic data of the respondents such as age, gender, religion, marital status, educational status, occupation, ethnic background, residential address, and monthly income.

Section II: Questions on alcohol use (modified interview-version AUDIT questionnaire administered as a structured interview)

Section II of the interview schedule contained 12 items. These items elicited data on the alcohol use of the respondents.

The AUDIT was developed by the World Health Organization. The AUDIT manual was developed by Babor et al (2001). The AUDIT questionnaire and manual are available on the WHO website at http://whqlibdoc.who.int/hq/2001/WHO_MSD_MSB_01.6a.pdf. Information on the various pages of the WHO website is issued by the WHO for general distribution. Information on the websites and the AUDIT manual may be reviewed, reproduced or translated for research purposes (Babor et al 2001:2; *Copyright notice* [s.a.]).

The AUDIT has been translated into several languages (Babor et al 2001:13). The researcher consulted in writing with the WHO headquarters in Geneva about the availability of an Amharic translation of the AUDIT and the procedures to be followed during the use and translation of the AUDIT. The researcher was authorised to translate, modify and use the AUDIT by the WHO (refer to **Annexure J**). The researcher modified the interview-version AUDIT that was originally compiled by Babor et al (2001:31) by adding two supplementary questions and adapting the questions regarding alcohol use to refer to “in the past three months” instead of “in the past year”. The supplementary questions were added and the duration referring to alcohol use was adjusted in order to provide additional contextual data for the screening results and to help the psychiatric in-patients with providing accurate information regarding their alcohol use habits. The supplementary questions enquired into the type of alcoholic beverage used by the respondent (Q201 of the interview schedule) and, secondly, who

was concerned, why the concern arose, and when the concern arose regarding the respondent’s drinking (Q211 of the interview schedule). The supplementary questions did not influence the scoring of the AUDIT as they were not summed up in determining the total score of the modified AUDIT. In this study the cut-offs used by the scale authors were used since, to the knowledge of the researcher, no previous study had been done in Ethiopia that used the AUDIT as a data collection instrument.

Babor et al (2001:16) explain that the AUDIT may be administered either as an oral interview or as a self-report off a written questionnaire. The characteristic of these two approaches are reflected in Table 3.1. The relative merits of using the AUDIT as an interview over the self-report questionnaire are that the interview-version allows clarification of ambiguous answers and that it can be administered to patients with limited cognitive capabilities (Babor et al 2001:16), hence justifying the use of an interview-version AUDIT in the current study.

Interviewing is a flexible technique and allows the researcher to explore greater depth of meaning than she or he can obtain with other techniques (Burns & Grove 2009:405). An interview allows the researcher to clarify items which the respondents do not understand. Since the researcher actually interacts with the respondents face to face, the response rate is usually higher than in self-administered questionnaires. Conversely, structured interviews are self-reports and are therefore subject to respondent bias (Polit & Beck 2008:336).

TABLE 3.1: ADVANTAGES OF SELF-REPORT AND INTERVIEW APPROACHES TO AUDIT ADMINISTRATION

SELF-REPORT	INTERVIEW
Takes less time	Allows clarification of ambiguous answers
Easy to administer	Can be administered to patients with poor reading skills
Suitable for computer administration and scoring	Allows seamless feedback to patient and initiation of brief advice
May produce more accurate answers	

(Babor et al 2001:16)

Section III: Information on patients' own perceptions about the influence of alcohol use (self-designed and administered as a semi-structured interview)

Section III of the interview schedule contained four open-ended questions requesting the respondent to supply answers relevant to his or her perception regarding alcohol use. These items elicited data about possible factors that influenced the alcohol use of psychiatric in-patients. When the psychiatric in-patients gave answers to these open-ended questions or made spontaneous comments in Amharic, the statements were recorded verbatim in Amharic.

- **Document analysis checklist**

Document analysis is exploring written documents for content and/or themes (O'Leary 2004:10). Document analysis includes the collection, review, interrogation and analysis of various forms of text as a primary source of research data. This implies that a researcher utilises data in his or her research to substantiate arguments concerning a phenomenon of interest. However, such data source requires the researcher to consider both the original author's as well as his or her own potential sources of bias (O'Leary 2004:183).

In this study the researcher employed a checklist to extract information from the respondents' clinical notes. The decision to use the clinical records of the respondents as data sources was based on the assumption that clinical records contain unbiased clinical data with considerable credibility. The researcher formulated the items in a manner that elicited the required data from the documents. The checklist contained nine items specifically pertaining to the clinical characteristics of the psychiatric in-patients which might have been associated with alcohol use, and these items reflected the characteristics of the psychiatric in-patients' alcohol consumption (refer to **Annexure H**). The English version of the checklist was used to collect data from psychiatric in-patients' medical files which were recorded in their respective files in the English language. A systematic extraction of information focused on their psychiatric diagnosis (summarised into broad diagnostic classes according to DSM-IV) (APA 1994), length of hospital stay, currently prescribed psychotropic drug(s) and its/their respective dosage(s), incidents that could be related to alcohol consumption and/or alcohol interactions with the prescribed drugs, relapses and readmissions, use of other

substance(s), and parental use of alcohol. The DSM-IV is “a diagnostic system used in psychiatric clinical and research settings in many parts of the world, including Ethiopia” (Fekadu et al 2007b:2).

3.4.2.3 Pre-testing of the data collection instruments

Pretesting is the trial administration of a newly developed instrument. The intent of such pre-testing is to identify defects in the tool and to assess the required resources, including time, for the actual data collection process (Polit & Beck 2008:762). After all possible instances of ambiguity had been eliminated and the interview schedule had been translated into Amharic by a professional translator, the researcher undertook a pre-test on 25 February 2013 with eight randomly selected respondents (four male and four female) from the mental hospital. The pre-test interviews conducted with these eight respondents were not included in the final data analysis. The pre-testing of the instrument was conducted in order to find out whether there were any problems in the wording (such as ambiguity of meanings) or limitations in the response categories of the instrument. The responses of the respondents who participated in the pre-test and the experience while completing the checklist were used to finalise the form of data collection instruments. The pre-testing helped to determine the strength and weaknesses of the item format, wording order, and question pattern. It further helped to standardise the data capturing and recording. This training was very important in equipping the data collectors (the researcher and a psychiatric nurse) with the necessary skills to collect data for the study. It also helped the researcher and assistant interviewer to interpret each item in a similar manner.

3.4.2.4 Data collection procedure

Before the data collection process began, permission to interview the psychiatric in-patients and extract relevant information from their medical files to supplement the data obtained during the individual interviews was received from the management of the mental hospital (refer to **Annexure D**). The data collection was conducted over a four-day period from 26 February 2013 to 1 March 2013. The researcher trained a psychiatric nurse not working in the study hospital as an assistant interviewer to conduct structured interviews with the psychiatric in-patients who had given their informed consent to be part of the study. This helped to manage a covert pressure on the

psychiatric in-patients that could have arisen from the unequal power relationship between a health care provider working in the same hospital and a patient during this study thereby minimising power differentials (Fulford & Howse 1993:86; Keogh & Daly 2009:280). While the study was conducted, the researcher and the assistant interviewer completed the information that had been given by the respondents in response to the questions in the interview schedule.

The interviews were conducted in all the hospital wards by the researcher and an assistant interviewer using a standardised, pre-coded, translated, and pre-tested structured interview schedule. Each ward was allocated a code on the interview sheet. The researcher and the assistant interviewer who agreed to collect data for this study (refer to **Annexure I**) each interviewed every other psychiatric in-patient selected for this study.

The data collectors were dressed in white gowns. When the interviewers had introduced themselves at the time they explained the study and requested the respondents' consent to participate, they informed psychiatric in-patients that they were a medical doctor and a psychiatric nurse by profession. In the Ethiopian culture such professionals are expected to wear white gowns during communication with patients in a hospital so that the patients could trust them. Had the interviewers not been dressed in white gowns, the psychiatric in-patients might have been suspicious of them were working outside the hospital and it might have resulted in a high refusal rate. As data collectors the researcher and the assistant interviewer remained seated together until the end of every interview (Davies 2001:397; Joubert & Ehrlich 2007:194; Polit & Beck 2008:400). Also, the interviewers dressed in white gowns during the interviews might have increased the respondents' willingness to participate in this study because of the perception that a health professional dressed in a white gown works only for the good of patients.

One person conducted the interview while the other recorded the answers. This sped up the process and enabled the interviewer and the respondent to communicate directly with each other and to focus on the questions and the answers. This also comforted the psychiatric in-patients as a face to face interview with only one interviewer might have created emotional discomfort for them. Keogh and Daly (2009:279) explain that researchers must acknowledge the dynamic nature of the interviews involving

psychiatric patients and that such interviews need to be appropriate, creative and flexible. Thus the above scenery was in congruence with the researcher's observation that a one to one interview situation would do away with a friendly interaction or might be observed by the psychiatric in-patient as an 'interrogation'. Additionally, from experience the researcher had learnt in his clinical practice that psychiatric in-patients felt more comfortable when a treating doctor was accompanied by a psychiatric nurse than when he or she was alone. In fact, Keogh and Daly (2009:281) state that emotional discomfort might bias the responses of psychiatric in-patients, and that protecting from emotional discomfort is an ethical requirement of a study involving psychiatric in-patients. Interviewing every alternative respondent furthermore limited both mental and physical fatigue on the part of the interviewers. (On average 18 interviews were conducted a day by two interviewers for four consecutive days – this equalled 9 interviews by one interviewer and 9 interviews by the other in one full day). The process of alternating the interviewers also increased the possibility of obtaining correctly completed structured interview schedules (Keogh & Daly 2009:280).

In addition, the researcher extracted information on patient-related clinical variables from every psychiatric in-patient's medical file after each one's individual interview. The assistant interviewer helped in arranging the patients' files. Codes were used for the individual files instead of other personal identifiers to protect the respondents' privacy and confidentiality. Only the researcher had access to a list indicating the respondents' numbers (ranging from 1 to 70) and his or her corresponding medical file number. All the selected psychiatric in-patients per ward were interviewed on the same day to prevent them from speaking to each other about the study and contaminating the data (Brink et al 2006:47).

Semi-structured individual interviews were used to gather the data. This approach refers to an open, but focused, discussion with the purpose to explore and describe the perceptions of psychiatric in-patients with regard to alcohol use (Burns & Grove 2009:404). A central question was asked: "What are your perceptions regarding alcohol use?" and was followed up with probing questions. During the interviews verbatim quotes of the respondents were written down.

3.4.3 Data analysis

In the next section the data cleaning and data analysis are described.

3.4.3.1 Data cleaning

Data cleaning is performed by identifying outliers, incomplete data, and errors that might have occurred during the recording of the interviews (Polit & Beck 2008:644-645). The interviewers recorded every psychiatric in-patient's responses on one coded interview schedule. After the data had been checked for any possible errors that might have arisen from the original document during the transcription process or during the process of data entry, it was cleaned and subsequently entered into an excel sheet on a computer.

Data checking took place very soon (within a day) after the data had been collected "lest errors should bias the study findings, as the saying goes, garbage in, garbage out" (Joubert & Ehrlich 2007:128). Data checking was done by the researcher at the end of each of the four days during which the interviews had been conducted. This helped the researcher to detect errors such as missing data, items in which an interviewer provided two responses when only one was requested, items in which an interviewer had marked a response vaguely between two options that was corrected on the next day. Indeed, the researcher did find that for Q404 on the document analysis checklist which pertained to incidents that could be related to alcohol consumption and/or alcohol interactions with the prescribed drugs, nothing was documented on the medical files for any psychiatric in-patient (Burns & Grove 2009:448).

3.4.3.2 Data analysis

A data analysis is conducted to reduce, organise and give meaning to the data (Burns & Grove 2009:695). The analysis of the data in this study consisted of both descriptive statistics and inferential statistics. Statistics refer to the summary description of a given variable in a sample (Polit & Beck 2008:556). After the data had been coded and entered into a computer, the necessary data analysis was carried out using the SPSS version 21 statistical computer programme. The substance misuse ward (Ward 11) was included in the 11 wards. The results of the substance misuse ward were not identified

as a confounding variable (Burns & Grove 2009:178) and therefore there was no need for statistical control during the data analysis process.

3.4.3.2.1 Descriptive statistics

Descriptive statistics are used to describe and synthesise data (Polit & Beck 2008:556). The researcher used descriptive statistics to summarise and describe the data so that he would be able to assess the level or distribution of any particular characteristic (Joubert & Ehrlich 2007:135). Simple statistics such as mean, interquartile range, and percentages were used as descriptive statistics to describe the distribution of a variable in this study. The frequencies for the research variables were calculated and displayed using tables.

3.4.3.2.2 Inferential statistics

Inferential statistics are used to make inferences or draw conclusions about a population when data from a sample is given (Polit & Beck 2008:556). The researcher used inferential statistics to investigate possible associations between the study variables. Associations between the socio-demographic factors and alcohol use, and clinical factors and alcohol use were sought using the SPSS version 21 statistical computer programme. The researcher set the level of significance at 0.05 and used two-sided tests of significance. In the current study, the data analysis was done with the guidance of a statistician (refer to **Annexure K**).

3.4.3.2.3 Content analysis

According to Burns and Grove (2009:528), content analysis is designed to classify the words in a text into a few categories chosen because of their theoretical importance. The data from the open-ended questions in this study were explored in detail for common themes and these were then established into units of meaning (or codes). As the written word is the basic medium for analysis, replies from the psychiatric in-patients regarding their perceptions of alcohol use were recorded verbatim by using a pre-specified set of semi-structured questions (Joubert & Ehrlich 2007:324). The text from the answers of all the psychiatric in-patients was divided (or coded) into idea categories.

The responses from the open-ended questions were used to enhance the quantitative findings and also to promote data collection triangulation.

3.4.4 Validity and reliability

It is essential that a researcher must measure study variables in a population using both valid and reliable data collection instruments (Burns & Grove 2009:380). Reliable and valid data collection instruments are necessary to ensure the credibility of the study findings. In the following section the validity and reliability of the data collection instruments are discussed.

3.4.4.1 Validity

The validity of a measurement is “the degree to which an instrument measures what it is intended to measure” (Polit & Beck 2008:768). Validity in this study was determined by examining the internal and external validity (Burns & Grove 2009:726).

3.4.4.1.1 Internal validity

Internal validity refers to “the extent to which the effects detected in the study is a true reflection of reality rather than being the result of the effects of extraneous variables” (Burns & Grove 2009:704). To enhance internal validity in this study, a structured interview schedule and a document analysis checklist with a structured set of questions were used; a data collecting assistant, namely a psychiatric nurse, was trained; and the interview was conducted in a private room. In developing the interview schedule, the questions were clearly worded so that the instrument exactly measured the variables that it was intended to measure (refer to section **3.4.2**). The psychiatric in-patients in one ward were all interviewed on the same day to limit even the slightest possibility that information regarding the interviews were shared or mentioned to other potential interviewees. A pre-test was conducted prior to the study to examine the accuracy of the data collection instruments to further assure internal validity.

The AUDIT’s accuracy and utility in different settings, populations, and cultural groups has been proven. For the purpose of the current study items for the AUDIT were chosen on the basis of face validity, clinical relevance, and coverage of relevant conceptual

domains such as alcohol use, alcohol dependence, and adverse consequences of drinking. Special attention in the items selection was also given to gender appropriateness and cross-national generalisability (Babor et al 2001:5, 28).

3.4.4.1.2 External validity

External validity refers to the extent to which the research results can be generalised beyond the sample used for the study (Burns & Grove 2009:225). The generalisation of study findings can only be done if the sample was representative of the study population. In this study, representativeness was assured by using a probability sampling technique and selecting an adequate number of subjects (Joubert & Ehrlich 2007:347; Polit & Beck 2008:302). Generalising the study findings to the study population would therefore be justifiable. By being present when all the interviews were conducted, the researcher achieved a high response rate. Refusal to participate by a considerable number of eligible respondents selected to participate in a study decreases its external validity (Burns & Grove 2009:347). However, in this study all 70 eligible respondents willingly agreed to participate.

3.4.4.2 Reliability

Reliability is a major criterion of assessing the quality of a data collection tool. According to Polit and Beck (2008:452-455), the reliability of a data collection instrument is the consistency with which it measures the target attributes. Reliability is the degree to which a data collection tool measures the same way every time. This implies that reliability is the repeatability of the measurement; thus an instrument is considered reliable if the score on the same test given twice is similar or, as Joubert and Ehrlich (2007:284) claim, the degree to which an instrument produces consistent results on repeated testing is viewed as its reliability.

Polit and Beck (2008:455) note the reliability coefficient ('r') indicates the proportion of variance in a group of obtained scores that is attributable to true individual differences. It is expressed from 0.0 (no reliability) to +1.0 (perfect reliability). It therefore means that the closer it is to one, the higher the reliability of an instrument is. According to Polit and Beck (2008:454), a reliability coefficient above 0.80 is usually considered good. Less than that value indicates inadequate reliability. For instance, if $r=0.90$ on the test, it

means that 90% of the test scores are accurate while the remaining 10% could indicate a standard error. In this study the reliability of the interview schedule was assessed by determining the test-retest reliability of the AUDIT as well as the internal consistency of the AUDIT from previous studies. The interrater reliability of each section of the interview schedule in this study was also calculated (Burns & Grove 2009:378-379).

Internal consistency is the most widely used reliability approach among researchers (Polit & Beck 2008:455). The internal consistency of AUDIT is 0.84, and its test re-test reliability is 0.86 (Babor et al 2001:13; Peltzer et al 2011:31). A validation study of the AUDIT among university students in south-west Nigeria indicated that using a cut-off point of 5 for hazardous consumption, its sensitivity and specificity are 0.935 and 0.915 respectively; and that using a cut-off point of 7 for harmful consumption, its sensitivity and specificity are 0.935 and 0.862 respectively (Adewuya 2005:576).

In this study, the interrater reliability was checked throughout the interview on every tenth patient. This meant both interviewers filled in the interview schedule separately for the same tenth psychiatric in-patient. The interrater reliability was calculated using the following equation:

$$\text{Interrater reliability} = \frac{\text{Number of agreements in the corated patients}}{\text{Number of possible agreements in the corated patients}}$$

The calculated interrater reliability for the interview schedule was 92% to 98% (0.92 to 0.98) (refer to Table 3.2). This implies that the interview schedule used in this study had a good level of internal consistency.

TABLE 3.2: THE INTERRATER RELIABILITY OF THE DIFFERENT SECTIONS OF THE INTERVIEW SCHEDULE UTILISED IN THIS STUDY

SECTION	VARIABLE	INTERRATER RELIABILITY
I	Socio-demographic	98%
II	Modified interview-version AUDIT	92%
III	Perception of psychiatric in-patients regarding alcohol use	95%

The document analysis checklist was filled in by the researcher only, and the researcher collected complete information from all the patient charts.

3.5 SUMMARY

This chapter elaborated on the design and method used in this study. A quantitative, descriptive cross-sectional study design with an analytic component was employed. Details of the sampling and the data collection process from the sampled psychiatric in-patients in the study hospital were described. This study design triangulated two types of data collection methods, namely face to face structured interviews and a document analysis checklist. The way in which the data were analysed was indicated. The reliability and validity of the study were also addressed.

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CHAPTER 4

ANALYSIS, PRESENTATION AND DESCRIPTION OF THE STUDY FINDINGS

4.1 INTRODUCTION

In the previous chapter the research design and methods were discussed. This chapter deals with the data analysis and presents the study findings. Two data collection instruments, namely a structured interview schedule and a document analysis checklist, were used to collect data from 70 psychiatric in-patients who were admitted to a mental hospital in Ethiopia.

The purpose of this study was to identify factors associated with alcohol use among psychiatric in-patients in a mental hospital in Ethiopia. The specific objectives of the study were to

- identify factors associated with alcohol use
- describe the socio-demographic factors influencing alcohol use
- assess the clinical correlates of alcohol use
- propose recommendations for the hospital management based on the findings to address alcohol use among psychiatric in-patients

Specifically, this study sought to answer the following questions:

- Which factors are associated with alcohol use?
- Which socio-demographic factors influence alcohol use?
- Which clinical correlates are associated with alcohol use?
- What can be done by the management of the hospital to address alcohol use among psychiatric in-patients?

4.2 STUDY RESULTS

The results of this study are presented next. The AUDIT scores and the implications thereof (as described in Chapter 2 [section 2.5.1 to 2.5.3]) are briefly mentioned here for ease of reference.

- An AUDIT score of 0 in both sexes indicates *abstinence* meaning that no alcohol is used.
- An AUDIT score of 1–6 in females and 1–7 in males indicates *non-hazardous alcohol use*. It means the alcohol consumption is within the legal and medical guidelines and is not likely to result in alcohol-related problems.
- An AUDIT score of 7–15 in females and 8–15 in males indicates *hazardous alcohol use*. It is a pattern of alcohol consumption carrying with it a risk of harmful consequences to the drinker.
- An AUDIT score of 16–19 in both sexes indicates *harmful alcohol use*. It is a pattern of drinking that is already causing damage to the drinker's health.
- An AUDIT score of 20–40 in both sexes indicates possible *alcohol dependence*. The user demonstrates behavioural, cognitive and physiological changes such as having no control over alcohol use, a strong desire for alcohol and a physical withdrawal reaction when alcohol use is discontinued, an increased alcohol tolerance, a higher priority given to drinking than to other activities and obligations, and persistent drinking despite the harmful consequences.

4.2.1 Alcohol use of respondents

According to the total modified AUDIT scores, of the 70 (N=70) respondents, those who abstained from using alcohol was 44.3% (n=31); non-hazardous drinkers constituted 31.4% (n=22); and 14.3% (n=10) were harmful/hazardous drinkers. Ten percent (n=7) were possibly alcohol dependent. Table 4.1 shows the types of alcohol used by the respondents.

TABLE 4.1: TYPES OF ALCOHOLIC BEVERAGES USED BY RESPONDENTS (N=70)

TYPE OF ALCOHOL CONSUMED	RESPONSES		PERCENT OF CASES
	n	PERCENT	
<i>tella</i>	24	30.8	72.7
beer	26	33.3	78.8
<i>tej</i>	9	11.5	27.3
<i>araki</i>	11	14.1	33.3
other alcohol	8	10.3	24.2
TOTAL	78	100.0	236.4

As shown in Table 4.1 the qualitative analysis of the types of alcoholic beverages consumed showed that ‘*tella*’, ‘beer’, ‘*tej*’, ‘*araki*’, and ‘other alcohol’ were the main types of alcohol consumed by the respondents. It is important to note that multiple responses were applied to each of the categories because the majority of those respondents who used alcohol had drunk more than one type of alcoholic beverage. Out of the non-abstinent respondents 72.7% (n=24) had drunk *tella*, 78.8% (n=26) had drunk beer and the minority, namely 33.3% (n=11) had drunk *araki*.

4.2.2 Factors associated with alcohol use

The researcher assessed the socio-demographic factors and clinical correlates quantitatively (see sections 4.2.2.1 to 4.2.2.2). The perceptions of the respondents, who were all psychiatric in-patients at the particular mental hospital in Ethiopia, regarding alcohol use were explored qualitatively (see sections 4.2.2.3.1 to 4.2.2.3.4).

The quantitative finding related to the socio-demographic factors and clinical correlates are presented in table format and analysed after each table under sub-headings.

4.2.2.1 Socio-demographic factors

The socio-demographic factors that were assessed included information on the respondents’:

- gender
- age
- marital status
- area of residence
- the distance they lived from the mental hospital
- religious affiliations
- ethnicity
- employment status
- monthly income (in Ethiopian Birr)
- educational status.

Table 4.2 illustrates the relationship between the socio-demographic factors and the alcohol use of the psychiatric in-patients.

TABLE 4.2: RELATIONSHIP BETWEEN SOCIO-DEMOGRAPHIC CHARACTERISTICS AND ALCOHOL USE AMONG PSYCHIATRIC IN-PATIENTS IN MENTAL HOSPITAL X, ADDIS ABABA, ETHIOPIA

SOCIO-DEMOGRAPHIC FACTORS		ALCOHOL USE PATTERNS						PEARSON CHI-SQUARE	df	p-VALUE
		ABSTINENCE		NON-HAZARDOUS		HAZARDOUS/HARMFUL ALCOHOL USE				
		Count	Percent	Count	Percent	Count	Percent			
GENDER	Male	22	43.1	12	23.5	17	33.3	8.724 ^a	2	0.013
	Female	9	47.4	10	52.6	0	0.0			
AGE GROUP (IN YEARS)	18-24	7	46.7	4	26.7	4	26.7	7.194a	6	0.303
	25-34	14	43.8	12	37.5	6	18.8			
	35-44	8	44.4	5	27.8	5	27.8			
	44+	2	40.0	1	20.0	2	40.0			
MARITAL STATUS	Single	24	44.4	14	25.9	16	29.6	7.428a	6	0.283
	Married	4	44.4	5	55.6	0	0.0			
	Separated	3	42.9	3	42.9	1	14.3			
AREA OF RESIDENCE	Rural	4	36.4	6	54.5	1	9.1	11.043 ^a	2	0.004
	Urban	27	45.8	16	27.1	16	27.1			
DISTANCE FROM THE MENTAL HOSPITAL	Distance ≤125km	21	45.7	12	26.1	13	28.3	3.183 ^a	2	0.204
	Distance >125km	10	41.7	10	41.7	4	16.7			

SOCIO-DEMOGRAPHIC FACTORS		ALCOHOL USE PATTERNS						PEARSON CHI-SQUARE	df	p-VALUE
		ABSTINENCE		NON-HAZARDOUS		HAZARDOUS/HARMFUL ALCOHOL USE				
		Count	Percent	Count	Percent	Count	Percent			
RELIGIOUS AFFILIATIONS	Orthodox	14	32.6	16	37.2	13	30.2	10.886 ^a	6	0.092
	Protestant	5	55.6	2	22.2	2	22.2			
	Catholic	0	0.0	1	100.0	0	0.0			
	Muslim	12	70.6	3	17.6	2	11.8			
ETHNICITY	Oromo	8	57.1	1	7.1	5	35.7	7.495 ^a	8	0.484
	Amhara	11	40.7	10	37.0	6	22.2			
	Tigre	3	75.0	0	0	1	25.0			
	Gurage	6	42.9	5	35.7	3	21.4			
	Other	3	50.0	1	16.7	2	33.3			
EMPLOYMENT STATUS	Governmental	4	66.7	1	16.7	1	16.7	9.917 ^a	12	0.623
	Non-governmental	3	27.3	4	36.4	4	36.4			
	Self-employed	5	23.8	8	38.1	8	38.1			
	Student	1	33.3	2	66.7	0	0.0			
	Retired	1	100.0	0	0.0	0	0.0			
	Un-employed	15	62.5	5	20.8	4	16.7			
	Other	2	50.0	2	50.0	0	0.0			
EST. MONTHLY INCOME (IN ETHIOPIAN BIRR)	<700	21	52.5	13	32.5	6	15.0	6.110 ^a	4	0.191
	701-1500	6	35.3	6	35.3	5	29.4			
	1501+	4	30.8	3	23.1	6	46.2			
EDUCATIONAL STATUS	No formal education	2	66.7	1	33.3	0	0.0	7.981 ^a	8	0.435
	Primary	11	50.0	7	31.8	4	18.2			
	Secondary	13	46.4	12	42.9	3	10.7			
	Diploma	4	30.8	1	7.7	8	61.5			
	Bachelor's degree	1	25.0	1	25.0	2	50.0			

4.2.2.1.1 Gender distribution of the respondents

The findings revealed that the majority of respondents were male (73% [n=51]) while 27% (n=19) were female. Out of these, 56.9% (n=39) of the male respondents and 52.6% (n=10) of the female respondents drank alcohol. Among the male drinkers 33%

(n=17) were hazardous/harmful alcohol users while none of the female drinkers was a hazardous/harmful alcohol user. As shown in Table 4.2 the alcohol use of the psychiatric in-patients was significantly higher in males than in females (p -value<0.05).

4.2.2.1.2 Respondents' ages

The age of the respondents was categorised in four groups: 18-24; 25-34; 35-44 and 45 years and older. The median age of the respondents was 30 years with the inter-quartile range (IQR) 25.75 to 37.75 years. About 44% (n=31) was between 25 and 34 years old; the 18 to 24 year old group was represented by 22% (n=15) and 27% (n=19) was 35 to 44 years old. Respondents who were 44 and older comprised 7% (n=5). Eight out of 15 respondents (53.3%) in the 18-24 year age group, 18 out of 32 (56.3%) in the 25-34 year age group, 10 out of 18 (55.6%) in the 35-44 year age group, and three out of the 5 (60%) respondents older than 44 used alcohol. From these drinkers the majority of those harmful alcohol users (35.3% [n=6]) were between 25-34 years old (see Table 4.2). The respondents' age categories were not significantly associated with the AUDIT scores.

4.2.2.1.3 Place of residence

With regard to their place of residence, 84.3% (n=59) of the 70 respondents was from urban settings and the rest (15.7% [n=11]) from rural settings. The assessment of the alcohol use pattern of the respondents from the rural settings showed that 36.4% (n=4) was abstainers, 54.5% (n=6) was non-hazardous alcohol users and the rest, namely 9.1% (n=1) was harmful or hazardous alcohol users or alcohol dependent according to the modified AUDIT score. Conversely, of the respondents who lived in urban settings 45.8% (n=27) was abstainers, 27.1% (n=16) was non-hazardous alcohol users, and 27.1% (n=16) was harmful or hazardous alcohol users. Using the modified AUDIT score analysis indicated that alcohol use was significantly higher among the psychiatric in-patients who resided in rural areas than in those who lived in urban areas.

4.2.2.1.4 Marital status

None of the 70 respondents were widowed but 77.1% (n=54) was single; 12.9% (n=9) was married; 10% (n=7) was separated. Fifty-six percent of those respondents who

were single (n=30), 55.6% (n=5) of those who were married, and 57.1% (n=4) of those who were separated used alcohol (see Table 4.2). In this study the respondents' marital status was not significantly associated with alcohol use.

4.2.2.1.5 *Distance they lived from the mental hospital*

Of the respondents, 67.1% (n=47) came from more than 125 kilometres away from the mental hospital while the remaining 32.9% (n=23) lived within a range of 125kilometresof the hospital. The distance that they lived from mental hospital had no significant effect on their alcohol use.

4.2.2.1.6 *Religious affiliation*

Regarding the religious affiliations of the respondents, 61.4% (n=43) was Orthodox Christians, 24.3% (n=17) was of the Muslim faith and 12.9% (n=9) was Protestant Christians. Only 1.4% (n=1) of them were Catholic Christians. Approximately sixty-seven percent (n=29) of the Orthodox Christians, 44% (n=4) of the Protestant Christians, 42% (n=5) of the Muslim respondents and the one Catholic respondent used alcohol (see Table 4.2). Religious affiliation was not significantly associated with alcohol use.

4.2.2.1.7 *Ethnicity*

The ethnic culture of 38.6% (n=27) was *Amhara*, 27.1% (n=19) was *Gurage*, 20% (n=14) was *Oromo*, 5.7% (n=4) was *Tigre* and 4.3% (n=3) was *Silte*. The *Burji*, *Hadiya* and *Wolayita* ethnical groups comprised of 1.4% (n=1) each. Out of those who were *Amhara* by ethnicity 59.3% (n=16), out of those who were *Gurage* 57.1% (n=8), out of those who were *Oromo* 42.9% (n=6), out of those who were *Tigre* 25% (n=1) used alcohol. In the others category out of those who were *Silte* 33.3% (n=1) used alcohol; those who were *Hadiya* and *Wolayita* by ethnicity each used alcohol; and the respondent who was *Burji* by ethnicity abstained (see Table 4.2). However, ethnicity was not significantly associated with alcohol use.

4.2.2.1.8 Employment status and estimated monthly income

Fifty-four percent (n=38) of the respondents was employed and 46% (n=32) was unemployed. Of those who were employed, 15.8% (n=6) was employed at governmental organisations, 28.9% (n=11) worked at non-governmental organisations, and 55.3% (n=21) was self-employed. An average monthly income of less than 701 Ethiopian Birr was reported by 55.7% (n=39) respondents. Between 701 and 1 500 Ethiopian Birr was earned per month by 24.3% (n=17) while 20% (n=14) indicated their estimated monthly income was more than 1501 Ethiopian Birr per month. In March 2013 the currency converter indicated that 18.2 Ethiopian Birr was the equivalent of one US dollar (\$1) and one South African Rand was the equivalent of 2.0 Ethiopian Birr (Currency converter [s.a.]). Neither the employment status of the respondents nor their estimated monthly income was significantly associated with alcohol use.

4.2.2.1.9 Educational status

The study results showed that the respondents' educational levels ranged from no formal education to a university degree. Of the 70 respondents, 5.7% (n=4) had had no formal education; 31.4% (n=22) had had primary school education and 17.1% (n=12) had had secondary school education. The highest percentage, 38.6% (n=27) had obtained a college diploma while 7.1% (n=5) held a university degree, but again the educational status of the respondents was not significantly associated with alcohol use.

4.2.2.2 Clinical correlates

The clinical correlates of the respondents that were assessed in this study included the psychiatric diagnoses of the patients, relapses and readmissions, the history of the use of other substances, parental alcohol use, length of stay in hospital (days), and prescribed psychotropic drugs. Table 4.3 shows the relationship of the clinical correlates and alcohol use among psychiatric in-patients in mental hospital X, Addis Ababa, Ethiopia and Table 4.4 the relationships between the clinical correlates and patterns of alcohol use among the psychiatric in-patients in the same hospital.

TABLE 4.3: RELATIONSHIP OF THE CLINICAL CORRELATES AND ALCOHOL USE AMONG PSYCHIATRIC IN-PATIENTS IN MENTAL HOSPITAL X, ADDIS ABABA, ETHIOPIA

CLINICAL CHARACTERISTICS OF RESPONDENT		ALCOHOL USE				PEARSON CHI-SQUARE	df	p-VALUE
		NO		YES				
		Count	Percent	Count	Percent			
RELAPSES AND READMISSIONS	Yes	21	51.2	20	48.8	1.904 ^a	1	.168
	No	10	34.5	19	65.5			
HISTORY OF USE OF OTHER SUBSTANCES	Yes	17	42.5	23	57.5	.998 ^a	1	.318
	No	14	46.7	16	53.3			
PARENTAL USE OF ALCOHOL	Yes	10	26.3	28	73.7	8.040 ^a	1	.005
	No	21	65.6	11	34.4			
LENGTH OF HOSPITAL STAY (IN DAYS)	14–30	10	37.0	17	63.0	.249 ^a	1	.883
	31–60	12	41.4	17	58.6	1.904 ^a	1	.168
	61–90	9	64.3	5	35.7			

TABLE 4.4: RELATIONSHIPS BETWEEN THE CLINICAL CORRELATES AND PATTERNS OF ALCOHOL USE AMONG PSYCHIATRIC IN-PATIENTS IN MENTAL HOSPITAL X, ADDIS ABABA, ETHIOPIA

CLINICAL CHARACTERISTICS		MODIFIED AUDIT SCORE**						PEARSON CHI-SQUARE	df	p-VALUE
		ABSTINENT		NON-HAZARDOUS		HAZARDOUS/HARMFUL				
		Count	Percent	Count	Percent	Count	Percent			
PSYCHIATRIC DIAGNOSIS OF PATIENT	Schizophrenia	22	48.9	16	36	7	15.6	20.4a	10	0.027
	Brief and other psychotic disorders (other than substance-induced psychosis)	1	100.0	0	0	0	0.0			
	Major depression	1	14.3	5	71	1	14.3			
	Bipolar disorder	5	55.6	1	11.1	3	33.3			
	Substance-induced psychosis	2	33.3	4	66.7	0	0.0			

CLINICAL CHARACTERISTICS		MODIFIED AUDIT SCORE**						PEARSON CHI-SQUARE	df	p-VALUE
		ABSTINENT		NON-HAZARDOUS		HAZARDOUS/HARMFUL				
		Count	Percent	Count	Percent	Count	Percent			
PSYCHIATRIC DIAGNOSIS OF PATIENT	Schizophrenia	22	48.9	16	36	7	15.6	20.4a	10	0.027
	Brief and other psychotic disorders (other than substance-induced psychosis)	1	100.0	0	0	0	0.0			
	Major depression	1	14.3	5	71	1	14.3			
	Bipolar disorder	5	55.6	1	11.1	3	33.3			
	Substance-induced psychosis	2	33.3	4	66.7	0	0.0			
	Other (alcohol dependence)	0	0.0	0	0	2	100.0			
	RELAPSES AND READMISSIONS	Yes	21	51.2	12	29	8	19.5	2.123	2
	No	10	34.5	10	34	9	31.0			
HISTORY OF USE OF OTHER SUBSTANCES	Yes	17	42.5	11	28	12	30.0	1.827	2	0.401
	No	14	46.7	11	37	5	16.7			
PARENTAL USE OF ALCOHOL	Yes	10	26.3	17	45	11	28.9			
	No	21	65.6	5	16	6	18.8			
LENGTH OF HOSPITAL STAY (IN DAYS)	14–30	10	37.0	9	33	8	29.6	1.59a	4	0.809
	31–60	12	41.4	10	34	7	24.1			
	61–90	9	64.3	3	21	2	14.3			

**Modified AUDIT score of 0 in both sexes indicates abstinence in the previous three months; modified AUDIT score of 1-6 in females and 1-7 in males indicates non-hazardous alcohol use in the previous three months; and modified AUDIT score ≥ 7 in females and ≥ 8 in males indicates hazardous/harmful alcohol use in the three months before the study was conducted.

4.2.2.2.1 Relapses and readmissions

In Table 4.3 the study results show that the majority of respondents (59% [n=41]) experienced relapses or readmissions. The rest, namely 41% (n=29), did not

experience relapses or readmissions. Out of those who experienced relapses or readmissions (n=41), 48.8% (n=20) used alcohol (see Table 4.3). Having relapses and readmissions were not significantly associated with alcohol use.

4.2.2.2.2 History of use of other substances

As shown in Table 4.3, of the 70 respondents, 57.1% (n=40) had a history of using other substances apart from alcohol. Out of the respondents who used substances, 57.5% (n=23) also used alcohol (see Table 4.3). Table 4.5 shows that there were 82 responses of substance use other than alcohol in this study. Among such substances used by the respondents included *khat*, a psycho-stimulant leaf that is chewed. Respondents who used substance in this study chewed *khat* in 92.5% of the cases (see Table 4.5).

Khat (*Catha edulis*) is an evergreen perennial shrub plant that belongs to the *Celastraceae* family (Lemessa 2001). When *khat* leaves, which are known to contain the psychoactive ingredients cathinone, are chewed and the juice ingested it produces a feeling of euphoria, removal of fatigue, and a feeling of well-being (Al-Motarreb, Baker & Broadley 2002:405-406; Patel 2000:329). In their study among the staff of a university in south-west Ethiopia Gelaw and Haile-Amlak (2004:181) found that reasons given by *khat* chewers for chewing it included “to increase performance”, “for relaxation” and “for socialisation”. Another study by Kebede (2002:13) among college students in north-west Ethiopia indicated that the main reasons for starting to chew *khat* were “to keep alert while reading” and “for relaxation with friends”.

Cigarette (tobacco) and *shisha* were other substances that the respondents used. Cigarettes were used in 97.5% of the cases who used substance and *shisha* was used in 15% of the cases who used substance in this study (see Table 4.5). *Shisha* is a specially made tobacco (a mixture which may include tobacco, honey, orange, white grape, chocolate mint, hashish and spices) and is smoked from an oriental tobacco pipe (Alem et al 2006:95; *Hookah smoking* [s.a.]). *Shisha* is smoked by indirectly heating such tobacco with burning charcoal. Before being inhaled, the smoke is filtered through a bowl of water (sometimes mixed with other liquids such as wine) and then drawn through a rubber hose to a mouthpiece. During the process of inhalation bubbles are heard due to the passing of smoke through the water (Al-Naggar & Saghir 2011:3041).

Among those respondents who reported a history of other substance use, 90.2% (n=37) had chewed *khat*, 95.1% (n=39) had smoked cigarettes and 14.6% (n=6) had smoked *shisha* (see Table 4.5). However, the use of other hard drugs or medications of abuse was reported by none of the respondents. The respondents' history as far as the use of addictive substances other than alcohol was concerned was not significantly associated with alcohol use.

TABLE 4.5: PREVALENCE OF SUBSTANCE USE OTHER THAN ALCOHOL AMONG PSYCHIATRIC IN-PATIENTS

CLINICAL CHARACTERISTICS		RESPONSES		PERCENT OF CASES
		n	PERCENT	
TYPE OF SUBSTANCE USE	Chew <i>khat</i>	37	45.1	92.5
	Smoke cigarette	39	47.6	97.5
	Smoke <i>shisha</i>	6	7.3	15
	TOTAL	82	100.0	205.0

4.2.2.2.3 Parental use of alcohol

As shown in Table 4.3, of the respondents' parents 54% (n=38) had consumed alcohol. Out of the respondents whose parents use alcohol, 73.7% (n=28) also used alcohol. Their parents' use of alcohol and alcohol use among the respondents were significantly associated (p-value<0.05) (see Table 4.3).

4.2.2.2.4 Length of stay in hospital

Regarding the length of stay in hospital of the respondents, 38.6% (n=27) stayed from 14 to 30 days, 41.4% (n=29) stayed from 31 to 60 days, and 20% (n=14) stayed from 61 to 90 days. When considering the length of stay in hospital, out of 39 psychiatric in-patients who used alcohol, 43.6% (n=17) stayed 14-30 days, 43.6% (n=17) stayed 31-60 days, and 12.8% (n=5) stayed 61-90 days (see Table 4.3). However, the length of stay in hospital of the respondents was not significantly associated with alcohol use.

4.2.2.2.5 *Psychiatric diagnoses*

Regarding the psychiatric diagnoses of patients the results (see Table 4.4) reveal that 64.3% (n=45) had been diagnosed as having schizophrenia, 12.9% (n=9) had been diagnosed with bipolar disorder and 10% (n=7) with major depression. Furthermore, 8.6% (n=6) had been diagnosed as having substance-induced psychosis and 2.9% (n=2) had alcohol dependence. Only 1.4% (n=1) had been diagnosed with brief and psychotic disorders other than schizophrenia. In this study out of the patients diagnosed with schizophrenia, 51.1% (n=23) used alcohol; 85.7% (n=6) of those with major depression consumed alcohol; and 44.4% (n=4) of those with bipolar disorder used alcohol (see Table 4.4). From Table 4.4 it is obvious that having been diagnosed with schizophrenia was statistically associated with alcohol use among psychiatric in-patients (p-value<0.05).

4.2.2.2.6 *Prescribed psychotropic drugs*

Prescribed psychotropic drugs were assessed using multiple responses. The result (see Table 4.6) shows that a number of psychotropic drugs were prescribed for the psychiatric in-patients. Only 21.4% (n=15) of psychiatric in-patients was prescribed only one type of psychotropic drug in this study. Of this 86.7% (n=13) was prescribed only chlorpromazine, 6.7% (n=1) was prescribed only haloperidol, and another 6.7% (n=1) was prescribed only risperidone. Of the total of 70 patients, 78.6% (n=55) was prescribed a combination of two or more types of psychotropic medication (see Table 4.7). The use of two or more psychotropic medications to treat a psychiatric patient has been a common treatment practice in several countries (Haeberle, Greil, Russmann & Grohmann 2012:153; Moore, Jaime, Maharajh, Ramtahal, Reid, Ramsewak, & Maharaj 2002:209-210; Safer, Zito & Dosreis 2003:440-441). Nevertheless, such complex regimens may lead to poor adherence to treatment because of pill burden, cost of drugs and potential drug-drug interactions with resultant worsening of drug side effects and toxicity in the patient (Ismail, Iqbal, Khattak, Javaid, Khan, Khan & Asim 2012:292-293; Osterberg & Blaschke 2005:490, 493). The researcher also noted that some psychiatric in-patients were prescribed two or more classes of antipsychotics, for example:

- chlorpromazine+fluphenazine, thioridazine+haloperidol+fluphenazine, and chlorpromazine+haloperidol+risperidone)
- others were getting two classes of antidepressants (for example amitriptyline+fluoxetine) concurrently

Out of the total prescribed drugs 44.9% were chlorpromazine, 36.2% were haloperidol, 1.4% were trifluoperazine, 8.7% were amitriptyline, 14.5% were fluoxetine, and 68.1% were other drug types: for example, risperidone, olanzapine fluphenazine, carbamazepine, lithium, sodium valproate, clonazepam, bromazepam and diazepam, and promethazine. Chlorpromazine, prescribed for 44.9% of the respondents, is the “first [ever] antipsychotic drug that had come to psychiatry in the second half of the 20th century” (Lehmann & Ban 1997:153). In this study the prescription of multiple and non-fixed combinations of psychotropic medications to psychiatric in-patients did not allow the researcher to look for associations between alcohol use and specific psychotropic medication/drug combinations.

The troublesome matter in this study is that thioridazine was prescribed in 2.9% of the cases. According to Reilly, Ayis, Ferrier, Jones and Thomas (2002:521), both low-dose and high-dose thioridazine exposure are significantly associated with sudden death in psychiatric in-patients. The researcher found that although thioridazine is an obsolete psychotropic drug in countries like Canada, the USA and the United Kingdom (UK) due to the cardiac side effects and its association with sudden death (*Dear doctor or pharmacist* 2001; Reilly et al 2002:521; *Thioridazine ...* [s.a.]), it was still being used as an anti-psychotic drug in Ethiopia. It was prescribed for the treatment of a range of mental, behavioural and emotional disturbances, including schizophrenia, despite the fact that no information on the cardiac function status of the patients was known or available.

TABLE 4.6: TOTAL PRESCRIBED PSYCHOTROPIC DRUGS FOR PSYCHIATRIC IN-PATIENTS

	DRUG TYPES	RESPONSES		PERCENT OF CASES
		n	PERCENT	
PRESCRIBED DRUG	chlorpromazine	31	25.4	44.9
	thioridazine	2	1.6	2.9
	haloperidol	25	20.5	36.2
	trifluoperazine	1	0.8	1.4
	amitriptyline	6	4.9	8.7
	fluoxetine	10	8.2	14.5
	Other drug types	47	38.5	68.1
TOTAL		122	100.0	176.8

TABLE 4.7: TYPE OF PSYCHOTROPIC DRUG/S PRESCRIBED FOR PSYCHIATRIC IN-PATIENTS

TYPE OF PRESCRIBED PSYCHOTROPIC DRUG	FREQUENCY (%)
One drug	15 (21.4%)
Two drugs	36 (51.4%)
Three drugs	11 (15.7%)
Four drugs	6 (8.6%)
Five drugs	2 (2.9%)

4.2.2.3 Perceptions of psychiatric in-patients regarding alcohol use

The perceptions of the respondents, who were all psychiatric in-patients in the particular mental hospital in Ethiopia, regarding alcohol use were explored qualitatively. When asked which people were concerned about their drinking or who had suggested that they stop drinking altogether, the 39 (55.7%) respondents who did drink alcohol indicated as follows: 13 (33.3%) said 'nobody'; 15 (38.5%) said 'a mental health professional', 17 (43.6%) indicated 'family' or 'relatives', 1 (0.03%) said 'friends', and 1 (0.03%) mentioned it was 'a teacher'. Most (n=20 [51.3%]) of the respondents who did drink alcohol reflected that the advice given to them regarding alcohol use had occurred three months or longer before this study was conducted.

The responses that the psychiatric in-patients gave of what they thought were the reasons why the aforementioned individuals offered them advice and support included:

“... to help me become a purposeful person ...”

“... because I was found drunk after consuming alcohol ...”

“... to inform me that alcohol has negative effects on my mental illness ...”

The perceptions of the respondents regarding alcohol use were assessed using four open-ended questions to which the respondents had to supply answers relevant to her or his thoughts regarding alcohol use. The following four themes emerged from the qualitative data:

- *THEME 1: Perception of positive effects of alcohol use*
- *THEME 2: Perception of negative effects of alcohol use*
- *THEME 3: Perception of linkage of alcohol use and mental illness*
- *THEME 4: Perception of stopping the use of alcohol*

The four themes and their individual sub-themes are discussed next.

4.2.2.3.1 THEME 1: Perception of positive effects of alcohol use

The perception that the use of alcohol can have positive effects, for example, that it can be therapeutic or medicinal if used moderately, is highly controversial (Sadock & Sadock 2007:393). Nevertheless, some respondents said that alcohol use could have positive effects although they also cautioned that it could potentially be harmful if used in excess. The following direct quotes from two respondents confirm this finding:

“the world (developing countries like Ethiopia or developed countries like the United States of America) has [have] never stopped producing or consuming alcohol ... this implies that alcohol must have some uses.”

“Alcohol use would be harmful only if used in excess. Even honey can be harmful if used in excess.”

One respondent used the metaphor of fire to explain that alcohol use has both benefits and risks:

“To me alcohol and fire are the same. Fire is so useful to carry out our daily activities. If not handled with care, fire could kill you or others, or fire could destroy the property that you collected throughout your life in a matter of hours. Alcohol could make you experience to talk publicly ... smiling ... alcohol could lay the ground to be a good orator, and hence a good leader ... On the contrary alcohol makes you drunk, and afterwards you may suffer from the consequences of drunkenness ... crimes ... arrests.”

Obviously some respondents were of the opinion that alcohol use could have various positive effects. The three categories that emerged from this theme included:

- Category 1: Physical effects
- Category 2: Social effects
- Category 3: Psychological effects

These effects were elaborated on by the respondents as follows.

- **Category 1: Physical effects**

When sharing their views regarding the positive physical effects of alcohol use, the respondents mentioned a number of ways in which they saw alcohol use in a positive light. One observed that alcohol could be a source of energy by stating:

“Our town is very cold. Alcohol is a carbohydrate (it is made from barley or wheat). Hence this keeps you warm.”

Others mentioned that alcohol use could facilitate farming activity, it could serve as a digestant, and it has germicidal activity.

“In our village if people take small amount of alcohol (two cups of ‘tella’ or two shots of ‘araki’) they do farming fast and energetically feeling happy. So when people come to our land to help us with farming, sowing seeds, or collecting, we usually serve homebrewed alcohol so that the work gets done fast and nicely.”

“It is said by many that alcohol is a good digestant especially if taken after fatty meals.”

“The water that we consume is fetched from a nearby pond. The taste of the water is not palatable. Those who consume this water for drinking usually get

diarrhoea easily. But if 'tella' is made from this water and is taken, one would not have diarrhoea and the taste of the water would be better."

It was also noted that alcohol could be used as a coping mechanism as confirmed by the following quotes:

"... alcohol could lessen symptoms of 'mental disturbance' like lack of sleep and worrying excessively one could drink alcohol ..."

"... alcohol use can break [arrest] the [feeling of] hyper excitation [manifested by symptoms such as over talkativeness, fast heart rate, profuse sweating, and sleeplessness] after the use of [psychoactive] stimulants such as khat."

"I have heard some mentally ill people [admitted in this hospital] who are prescribed 'strong' tablets/injections for their mental illness say that a bottle of beer/a sip of 'araki' helps them stay wakeful during day time by assisting them rid of the [drowsy] side effects of such 'strong' tablets/injections ..."

○ **Category 2: Social effects**

Social drinking is accepted in many cultures around the world (WHO 1999:1-2). The respondents shared this view by explaining that alcohol may be consumed as a recreational activity, to celebrate good news, or as an emotional expression during social celebrations such as weddings. When mentioning the positive social effects of alcohol use, three respondents voiced that:

"Alcohol is a recreational drink ... it helps you pass away boring days ... can you enjoy drinking water? ... Can you enjoy just sitting down and staying drinking coffee or tea for a long time with a friend? I do not think so ... [smiling]... but you can enjoy drinking beer with a friend chatting for hours..."

"For instance I am a merchant. Weekly there are lotteries that we participate in with fellow merchants. Weekly there are winners and winners invite beer, not coffee or soft drinks. Refusing invitations is considered disrespect [as disrespectful] to the inviting merchant. Grabbing two or three beers we enjoy, and have constructive discussions about our jobs taking our time."

"Alcohol use helps you express your feelings. During weddings or holidays it gives you strength to dance. I consider a wedding without alcohol just like serving a food without salt..."

- **Category 3: Psychological effects**

The positive psychological impacts of alcohol use, according to the respondents, included an improvement in the ability to communicate and it elated one's mood; it significantly increased one's level of confidence; it was refreshment; it gave on the sense of being rich, and it increased the levels of energy in a person who was capable to drink more alcohol. Describing the positive psychological effects of alcohol use the respondents verbalised that:

“Alcohol makes you less tense ... you may be able to speak with a lady [if one is a male and phobic to speak with females] more comfortably than when you are sober.”

“Alcohol makes your worries fly away. Alcohol makes you fat, and hence makes you look richer [meaning being fat is a sign of a rich man].”

“Alcohol use refreshes one's mind. ... after drinking one or two bottles of beer a person becomes funny and approaches people more easily than a sober person ...”

“Some people who feel sad most of the time get happy when they drink alcohol.”

“Alcohol use is a measure of masculinity in my town. Once I was won [was beaten in a competition] because my competitor drank 21 bottles of beer all at once while I could drink only 18.”

4.2.2.3.2 *THEME 2: Perception of negative effects of alcohol use*

The analysis of the responses of the psychiatric in-patients showed that they admitted that alcohol use had potential negative effects. The four categories that emerged from this theme were:

- Category 1: Physical effects
- Category 2: Social effects
- Category 3: Psychological effects
- Category 4: Financial effects

- **Category 1: Physical effects**

All the respondents stated that alcohol use did lead to several negative physical effects on the user. They agreed that alcohol could harm various body organs and also said that alcohol use could result in drunkenness, sexual assault, and could predispose one to HIV infection. The respondents' verbatim quotes follow.

"... alcohol use makes your hands shake making you unable to feed yourself, write a note, or even put your signature [on paper] ..."

"My sister's husband was repeatedly told by a doctor to stop alcohol after the medical examination showed that his liver was damaged ... he couldn't discontinue alcohol ... [he] later died after vomiting a large bolus of blood."

"... alcohol causes gastric irritation, hypertension, liver disease, diabetes ... and problem of the nerves."

"Once I passed [a] whole night sleeping out in the fields after getting drunk. That day I would even have been eaten by a hyena."

"When I was 12, I was raped at [in] the backyard of [during] a wedding ceremony by a married person who was under the influence of alcohol ..."

"Alcohol use could increase [one's] libido, and could lead to having intercourse with multiple sexual partners which in turn could predispose [one] to HIV infection."

One respondent elaborated on her negative experience of alcohol use and how, while under the influence of alcohol, she had made decisions that could have had a severely negative physical impact on her.

"If God had not saved me, I would be like Miss X, Miss Y, Miss Z [mentioning the name of her previous friends working as commercial sex workers who died after becoming skin and bone]. This is because they slept with their clients without condoms after getting drunk ... A married man who initially plans to drink two or three beers and go back home asks to sleep with a sex worker after passing his limits [getting drunk]. Even it is my own experience that after getting drunk I did intercourse with my client without condoms (I found the condoms which I planned to use in my pocket the next day) ... [she became absorbed in thought] ... God has saved me from all this mess ... [telling the interviewer that her serostatus was then negative for HIV]."

- **Category 2: Social effects**

As shown in the next three direct quotes, the respondents shared that they thought there seemed to be a relationship between alcohol use and social problems such as absenteeism from work, familial neglect, and acting disgracefully.

“Alcohol use causes absenteeism from your work because of hangover symptoms the next morning ...I personally quitted my reading habit [that I liked so much] when I used to drink alcohol daily.”

“A chronic alcohol user would only love alcohol (he would have no love for his family, relatives, or his country).”

“After drinking araki, a person may fall in the streets, and may be laughed at ... this is a shameful act.”

Some of the younger respondents, aged 18-24 years, mentioned the effect of peer pressure, a factor which was not mentioned by any of the older participants. A 22-year-old female, for example, explained her view on peer pressure and alcohol use as follows:

“... especially one may be persuaded during adolescence to drink alcohol by his or her peers. [She continued to explain that in her residence there were people who sold alcohol to school children]. Caught addicted with alcohol, these children later discontinued their education. As everybody knows adolescents take risks, take alcohol excessively, get drunk, sleep without jacket [without condoms], get HIV, become hopeless, and repeat same thing throughout their life ... can you see how the generation could easily be spoiled [fall into a negative downward spiral that continues throughout their life] due to alcohol?”

- **Category 3: Psychological effects**

The inability to control one's thought processes, irritability, feelings of guilt, worthlessness and being left without hope – these are some of the negative psychological consequences of alcohol use mentioned by the respondents who described their feelings as follows:

“Alcohol controls your mind, hence it is better that one quits alcohol and controls his mind by himself.”

“As a result of alcohol use you get irritated with trivial matters which you would consider normal if you were sober ...”

“When I used to drink alcohol, I used to drink daily and to the time that the bar is closed ... my wife used to always collect me from the bars ... there used to be no money left in my pocket to buy bread for my kids ... drunk, I used to disturb my family and neighbours [by] shouting and crying overnight. This has put inside me an eternal guilt.”

“Alcohol use could make you feel guilty, and hopeless, and worthless. It makes you exceptionally suspicious, sleepless, and brings abnormal perceptions to your senses. It even makes you forgetful.”

○ **Category 4: Financial effects**

The majority of the respondents shared that alcohol use inevitably led to a shortage of money due to the indiscriminate spending of money on alcohol instead of buying necessities such as food. The next three direct quotations confirm this finding:

“Once addicted, if a drinker is short of money, he may prefer to expend [spend all of] his money on alcohol postponing his meals.”

“... drinking alcohol could finish your money ... even you could spend more than 5,000 Birr in a single night (inviting others, losing some to bar ladies). If one was not drinking alcohol this amount of money that could be spent in a single night could help you live comfortably and happily for one month...”

“The head of a household finishing his money after drinking alcohol can sometimes bring no money for the expenses of the family ... divorce ... children become out of school and go to the streets ... children of such drinkers can commit crimes such as theft to survive ...”

4.2.2.3.3 THEME 3: Perception of linkage of alcohol use and mental illness

Most respondents showed insight with regard to the link between alcohol and mental illness. Ukpong and Abasiubong (2010:46) found in their study among teaching hospital senior staff members in Nigeria that the misuse of alcohol was endorsed as an important cause of mental illness. In this study most of the respondents agreed that alcohol use and mental illness were linked. These findings are confirmed by the following direct quotes from the interviews:

“Alcohol should not be drunk by those [who are] mentally ill. Alcohol makes the pills for mental illness not work properly; alcohol also makes you forget to take the pills on time ... you might even miss doses ... Alcohol makes the pill for mental illness unable to work.”

“Alcohol use can lead to mental illness of a drinker if alcohol is used frequently for several years... As a result of alcohol use of the head of a family, innocent wives and children can be disturbed in the middle of the night from their sleep or can even be beaten ... mental illness in the family members [of a drinker] can [also] occur as a result of becoming hopeless ...”

“Alcohol if used in excess of one’s limits can cause mental illness.”

“After guilty feelings following alcohol drinking, a person might be stressed and develop mental illness.”

“My mental illness once relapsed after I drank two bottles of beer and a shot of a whiskey, which I was served during the wedding ceremony of a friend. This demanded the psychiatrist who was following me [at that time] to increase the number of pills that I was taking from one tablet a day to three.”

“Alcohol use can act as a fuel to ignite mental illness ... A mentally ill person gets his symptoms worse (more sleeplessness, more mood swings, easily irritable) when he takes alcohol ... such symptoms faint [disappears] by themselves if he quits alcohol.”

However, some respondents did not think that there was a causal link between alcohol use and mental illness. One respondent stated:

“I do not think alcohol and mental illness are associated because I got mentally ill but I have never sipped alcohol.” Another voiced that alcohol use and mental illness *“are two separate unrelated entities”*.

A troublesome finding was that two of the respondents reported perceived their relatives as discriminating against them because the former forbade to use alcohol due to their mental illness when, in fact, the same family members would drink alcohol themselves while the patient was in their company. At issue here is the fact that this finding questions whether the familial support needed by psychiatric patients after they have been discharged from the mental hospital is forthcoming or, on the other hand, whether discharged mental patients who have been treated for alcohol misuse can by their own volition abstain from consuming alcohol by, for example, refusing to be in the company of family members or friends using alcohol. The fact that they feel

discriminated against is worrying. The two quotes pertaining to what the respondents perceived as 'discrimination' against them are:

"My relatives say alcohol worsens mental illness. When I go to recreational centres with my relatives, my relatives order soft drinks for me and beer for them. I do not feel comfortable with this. When such things happen, I always look forward to the day I will be fine in order to drink beer like my relatives."

"Once I become free of my mental illness, I want to drink alcohol. I feel I am inferior to others when I am forbidden to take alcohol. Because even my younger brothers take alcohol ..."

4.2.2.3.4 THEME 4: Perception of stopping the use of alcohol

Although the respondents seemed to realise that stopping alcohol use would be beneficial to themselves, their physical and mental health, their families and their financial situation, they also perceived stopping alcohol use as difficult:

"Stopping alcohol use brings back our peace ... stopping alcohol helps us limit our sexual partners ... stopping alcohol has economic benefits."

"Stopping alcohol use gives you a spare time to handle several social activities."

"Stopping eating and stopping alcohol use are two difficult things in this world."

"Alcohol should be used wisely ... stopping alcohol use demands perseverance and support from family and friends, and sometimes support from a health professional."

"Stopping alcohol use could have significant consequences on the economy of a country because many people live on the sale of alcoholic beverages including administrators, drivers, waiters, porters ... even the government could earn foreign currencies through exporting alcoholic beverages."

4.3 SUMMARY

In this chapter the researcher assessed the socio-demographic factors and clinical correlates that could be associated with alcohol use among psychiatric in-patients in a mental hospital in Ethiopia. The findings revealed that there was a significant association between alcohol use and being male; between alcohol use and living in an urban residential area, and between alcohol use and a diagnosis of schizophrenia. The findings further showed that the p-value of parental use of alcohol and alcohol use

among psychiatric in-patients was <0.05 . Of note is that thioridazine, which has been discontinued for the treatment of psychosis in most countries, is still being prescribed in Ethiopia.

All the psychiatric in-patients admitted that alcohol use could have negative effects, but associated these negative effects of alcohol to excessive use or to those who have alcohol 'intolerance'. At the same time, most of the psychiatric in-patients who participated in this study said that alcohol does have some positive effects. According to them, the positive effects mostly resulted from using alcohol as a source of energy, as a digestant, as a germicide, or as a coping mechanism to alleviate tension, symptoms of mental illness or the side effect of stimulants or psychotropic medications. They further admitted that the use of alcohol could cause, worsen, result in a relapse of mental illness, or could interact with psychotropic medications. Some of the patients realised that it might be difficult to stop alcohol once addicted, and that to stop using alcohol the support from family, friends or a health care professional was crucial.

The information presented in this chapter forms the basis for the recommendations and conclusions that are incorporated in Chapter 5.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapter dealt with the presentation and discussion of the findings of the data collected from 70 psychiatric in-patients in a mental hospital in Ethiopia. In this chapter a summary of the findings is presented, conclusions are drawn, and recommendations are made.

At the time of conceptualisation of this study, studies regarding alcohol use among psychiatric in-patients in Ethiopia were scarce. This prompted the researcher to conduct this study to assess alcohol use among psychiatric in-patients in a mental hospital in Ethiopia.

The summary of the study findings are briefly presented, conclusions are made based on the findings, and recommendations are made based on the relevant conclusions. Thereafter, the limitations of the study are described. Finally, suggestions for future research are provided and concluding remarks are given.

5.2 SUMMARY OF THE STUDY FINDINGS

Of the 70 respondents in the study, 44.3% (n=31) was abstainers, 31.4% (n=22) was non-hazardous drinkers, and 24.3% (n=17) was harmful drinkers according to the total modified AUDIT score. Fekadu et al (2007b:174) found in their study (N=1407) that 87% of the admitted psychiatric patients in this same hospital in Ethiopia abstained from using alcohol in the year preceding their study. The prevalence of abstention among male adults in Kolkata in India was 34.2% (Ghosh, Samanta & Mukherjee 2012:75-76). Brisibe and Odinioha (2011:99-100) indicated that, among a general rural population in Nigeria, 9.01% of the subjects abstained from drinking alcohol for at least one year preceding the study, and 33% had harmful alcohol drinking habits. In a national population survey in South Africa it was found that 72.3% of the adult population older

than 15 years had abstained from using alcohol during the month preceding the study (Peltzer et al 2011:32). These findings confirm that the frequency of abstinence was the lowest (9.01%) in a rural general population in Nigeria and the highest (72.3%) in an adult population in South Africa. The frequency of abstinence was less (33%) in a Nigerian rural population than that of the psychiatric in-patients in the current study (44.3%). It can therefore be concluded that after becoming mentally ill, it is possible for psychiatric patients to abstain from using alcohol. However, when comparing abstinence in psychiatric in-patients in Ethiopia it is evident that there had been more abstainers (87%) in the study previously conducted by Fekadu et al (2007b:174) in this same hospital. This can indicate the need for the hospital management to make a more concerted effort to educate psychiatric in-patients about the benefits of abstinence when mentally ill.

The prevalence of lifetime alcohol use disorder in Australian adults was 22.1%, which is equivalent to the finding in this study (24.3%). On the contrary, the prevalence of any alcohol use disorder was significantly higher (73%) among male Scottish prisoners (MacAskill, Parkes, Brooks, Graham, McAuley & Brown 2011:865). This finding can therefore suggest that there could have been under-reporting of alcohol use by the psychiatric in-patient population in the current study.

The types of alcoholic beverages used in this study included '*tella*', beer, '*tej*', '*araki*', and other alcohol. Most of the respondents had drunk more than one type of alcoholic beverage. Out of those who drank, 78.8% had drunk beer. The study by Fekadu et al (2007b) did not report on the types of alcoholic beverages used by psychiatric in-patients. Hence, the finding on the types of alcoholic beverages in this study was compared with the types of alcohol most frequently consumed by undergraduate students at the Addis Ababa University and youths aged 12 to 24 years in Ethiopia, which was found to include beer, wine, '*tella*', '*tej*', and '*araki*' (Deressa & Azazh 2011:660; UNFPA 2010:33). The findings indicate that there was considerable consumption of traditional alcoholic beverages in Ethiopia. The study by Brisibe and Odinioha (2011:99) indicated that of the subjects who used alcohol, 43% drank only the local gin, 50.17% drank all available alcoholic drinks, and 6.83% consumed only industrial beer and other alcoholic drinks produced outside the community.

Since eight out of a total of 11 hospital wards in the mental hospital were male wards, 73% of the respondents were males. There was also only one male ward in the hospital dedicated for substance misuse. Of the 70 respondents, 65.7% were younger than 34 years, 84.3% lived in urban areas, 75.7% were single, 61.4% were Orthodox Christians, 67.1% resided further than 125 kilometres from the study hospital, and 55.7% earned a monthly salary of less than 701 Ethiopian Birr. Furthermore, of the 70 respondents, 38.6% were *Amhara* in ethnicity, 54% were employed, and 38.6% had a secondary school education. The study by Fekadu et al (2007b:173) at this same hospital showed that out of the psychiatric in-patients admitted in the year preceding the study, 72.4% were males, 67.2% were between 16 and 30 years old, 70.2% were single, 69.5% were within a 125 kilometre radius from the mental hospital, and 46% were employed. The findings of both studies were comparable. Importantly though is that in the current study the information gathered pertained to the respondents' ethnicity, religion, education, the residential area they came from, and the income of patients who used alcohol. These factors had not been investigated in any other previous study in a mental hospital in Ethiopia. Consequently, the current study can serve as a baseline for future studies with the aim to investigate and explore the possible association of the above factors with alcohol use among psychiatric in-patients in Ethiopia.

The clinical assessment of the psychiatric in-patients in the current study showed 64.3% had a psychiatric diagnosis of schizophrenia. This was consistent with the findings of Fekadu et al (2007b:174) which showed that the majority (56.1%) of the admitted psychiatric patients in the year preceding the study at this same hospital also had a diagnosis of schizophrenia.

In the current study, 59% of the psychiatric in-patients had experienced relapses or readmissions, and 54.3% had a history of the additional use of other substances such as '*khat*', cigarettes, and '*shisha*'. The study by Fekadu et al (2007b) indicated that among psychiatric in-patients admitted to a mental hospital in Ethiopia, 38.5% had a history of previous admission and only 15.3% used '*khat*'. More than one psychotropic drug was prescribed for most (78.6%) of the patients in the current study. Amitriptyline, fluoxetine, chlorpromazine, haloperidol, thioridazine, trifluoperazine, fluphenazine, bromazepam, clonazepam, diazepam, and promethazine were among the prescribed psychotropic drugs.

The study findings further showed that being male, living in an urban residential area, having a psychiatric diagnosis of schizophrenia, and the parental use of alcohol were significantly associated with alcohol use. Brisibe and Odinioha (2011:100) also found that alcohol use was significantly associated with the male sex, polygamous marriages, religion, a lower educational status, and being engaged in palm wine tapping. Although religion was not significantly associated with alcohol use in this study (p -value=0.092), in their study among undergraduate medical students Deresa and Azazh (2011:660) established that Orthodox Christianity was strongly associated with alcohol use in the year preceding the study. Findings in the study by Brisibe and Odinioha (2011:100) confirmed that being a traditional religion follower or attending a Christian spiritual church was significantly associated with alcohol use.

Alcohol use and alcohol use disorders are more common in males than in females across regions (Patel 2007:89). A national youth survey by UNFPA (2010:33) also indicated that in Ethiopia 37% of boys (12-24 years) drank alcohol while only 17% of girls (12-24 years) drank alcohol. In conformity with this finding by UNFPA (2010), in the current study 76.5% of males and 52.6% of females drank alcohol. Besides, among the female drinkers in this study there were no hazardous alcohol users but among the male drinkers 58.6% used alcohol at hazardous level. The alcohol use of the psychiatric in-patients was also significantly higher in males than in females. This finding was consistent with a finding in urban hospital out-patients in South Africa and in Australian adults that reported alcohol use of males to be significantly higher than those of females (Pengpid et al 2011: 2635; Teeson, Hall, Slade, Mills, Grove, Mewton, Baillie & Haber 2010:2090).

Similarly, using the modified AUDIT score analysis indicated that alcohol use was significantly higher among psychiatric patients dwelling in urban areas than those who lived in rural areas. This was consistent with the findings of Peltzer et al (2011:32). According to Jaworowski, Raveh, Golmard, Gropp and Mergui (2012:296), alcohol use disorder was significantly associated with living alone, one's educational status, religious observance, and ethnicity. These authors also found that alcohol use was significantly higher among those who were divorced and separated. Teeson et al (2010:2087, 2090) found that the odds of alcohol dependence were significantly greater among respondents who were younger(16-24 years) and unmarried. The authors additionally indicated that alcohol use disorders declined thereafter steadily with age. In

the current study, the prevalence of alcohol use was highest in the age group 25-34 years (25.7%) and the prevalence of alcohol use disorder was also highest in this age group (8.6%), but no trend of increasing or decreasing alcohol use with age was noted. In fact, it was established that age, marital status, the distance from the health facility, religion, ethnicity, employment status, monthly income, and educational status were not significantly associated with alcohol use.

A study by Bimerew et al (2007:80) at the same mental hospital in Ethiopia indicated that all (100%) of focus group participants reported that their relatives who had been diagnosed with schizophrenia used alcohol. According to the Institute of Alcohol Studies (IAS), people with schizophrenia may use alcohol in order to cope (*Alcohol and mental health* 2007). Similarly, in this study it was found that schizophrenia was significantly associated with alcohol use of psychiatric in-patients. However, this finding is different from other findings in Ethiopia itself as well as in other countries. In a study conducted in Ethiopia, Beyero et al (2004:113) found that depression predicted alcohol use. A finding in Israel by Jaworowski et al (2012:296) showed that post-traumatic stress disorder was the only psychiatric diagnosis that was indicative of alcohol use disorder while Teeson et al (2010:2090) discovered that in Australia alcohol use disorder was meaningfully associated with anxiety disorder or drug use disorder.

In the current study, parental alcohol use was significantly associated with alcohol use. This was consistent with studies done by Deressa and Azazh (2011:660) among undergraduate medical students in Ethiopia in which it was shown that the students whose fathers drank alcohol were more likely to use alcohol as compared to those students whose fathers did not drink alcohol. The role of parental alcohol use in predisposing the alcohol use of children in the case of psychiatric in-patients or the general population is therefore meaningful. Besides, children who have been exposed to alcohol use during their mother's pregnancy are at higher risk for foetal alcohol syndrome (a syndrome with facial malformation and growth retardation), alcohol-related birth defects, and alcohol related neurodevelopmental disorder (WHO 2001:5).

Different authors in different countries found that tobacco use was greatly associated with alcohol use (Manimunda et al 2012:515; Pengpid et al 2011:2634; Deressa & Azazh 2011:660; Jaworowski et al 2012:296). Nevertheless, in the current study alcohol use was not indicative of tobacco use or other substance use. Kazadi, Moosa and

Jeenah (2008:54) found that substance use was significantly associated with relapse of a mental disorder, but relapse and/or readmission was not indicated as consequential of alcohol use or other substance use in the current study.

When asked why they drink, people often reply in terms of altering their mental state such as to relax, be confident, be happy, fit in, celebrate, become less anxious, become less depressed, become less inhibited, forget problems, or make friends (*Alcohol and mental health* 2007:4). The current study's findings highlighted a range of perceptions among psychiatric in-patients that directly contributed to their alcohol use. These perceptions of the positive effects of alcohol use that were mentioned by psychiatric in-patients included physical, social and psychological effects. They reported alcohol could be a source of energy; alcohol could facilitate farming activity; it could serve as a digestant; it had germicidal activity; alcohol could be used as a coping mechanism, as a recreational activity, to celebrate good news, or as an emotional expression during social celebrations such as weddings. The psychiatric in-patients further associated alcohol use with an improvement in the ability to communicate; an elation in one's mood; it increased one's level of confidence; it gave one the sense of being rich, the sense of possession, and increased the levels of energy in a person who was capable to drink more alcohol.

Bimerew et al (2007:80) indicated that psychiatric patients could use alcohol to reduce the unpleasant effects of psychotropic drugs such as drowsiness, inactivity, and feeling unhappy. This idea was shared by psychiatric in-patients in this study who said that a bottle of beer or a sip of 'araki' could help them stay wakeful during day time and helped them to get rid of the drowsiness due to "strong" tablets or injections prescribed for their mental illness. The psychiatric in-patients also said that alcohol could make psychotropic drugs ineffective and added that, after using alcohol a patient might not take his or her medication on time, or not take it at all. The patients also knew that alcohol use could have linkages with mental illness. This perception of the psychiatric in-patients was consistent with other findings which showed that globally there was a significant level of co-morbidity between alcohol use and mental illness, and that such co-morbidity worsened the prognosis and impact of mental illness (Patel 2007:90; Shivani et al 2002:92-93). Odejide (2006b:75) also reported that excessive alcohol use could be associated with the development of mental illness.

Another notable finding in this study is that those psychiatric in-patients who did drink alcohol, when asked which people were concerned about their drinking or who had suggested that they stop drinking altogether, 13 (33.3%) said “nobody”. Even those who were advised said that the advice given to them regarding alcohol use had occurred three months or longer before this study was conducted.

It was noted by the psychiatric in-patients that to stop alcohol use could be difficult. This view was shared by 48% of medical students at the University of Free State in Bloemfontein, South Africa, who reported they were unable to cut down or stop using alcohol (Smit et al 2009:16). An additional factor mentioned by the psychiatric in-patients as influencing alcohol use, was peer pressure. Hauli et al (2011:239) also concluded that psychiatric patients in Tanzania attributed their alcohol use to peer pressure, which is often accompanied by the curiosity to explore new experiences. The findings by Reda et al (2012:213) among high school students in Ethiopia also confirmed that having friends who drink alcohol and living with people who drink alcohol are very strong indicators of alcohol use.

5.3 CONCLUSIONS

The findings from this study provided a useful baseline on which subsequent studies and interventions regarding alcohol use among psychiatric in-patients in Ethiopia could be based. In this study most (55.7%) of the respondents used alcohol, and out of those who used alcohol 78.8% drank beer. The researcher found that the AUDIT questionnaire was a simple and easy tool with which to measure alcohol use in an Ethiopian psychiatric in-patient population.

Although there was no female ward dedicated for substance use in the mental hospital, some female psychiatric in-patients needed alcohol use treatment programmes – at least at out-patient level. In this study alcohol use was significantly associated with gender, the residential area, psychiatric diagnosis, and parental alcohol use. Males were at higher risk of using alcohol. This difference can be ascribed to the fact that there is a cultural influence on females not to drink alcohol publicly in Ethiopia. The findings also revealed that living in an urban residential area, having been diagnosed with schizophrenia, and parental alcohol use significantly predisposed the psychiatric in-patients to drinking alcohol.

Various combinations of psychotropic medications were used to treat psychiatric in-patients in this study. Despite the fact that, as a psychotropic drug thioridazine is not sold in most countries due to its serious cardiac side effects, it is still used as an antipsychotic drug in Ethiopia.

The psychiatric in-patients knew the most common health risks associated with alcohol use. They were frank in their perceptions regarding alcohol use, for example, that alcohol use could in fact have positive effects, alcohol use could lead to non-compliance with prescribed psychotropic medication and poor overall prognosis, and that stopping alcohol use could be difficult. The psychiatric in-patients mentioned peer pressure as an important factor influencing alcohol use and admitted that alcohol was used as a coping mechanism and as a way to socialise.

5.4 RECOMMENDATIONS

According to the WHO (2010b:8), people with mental health conditions comprise a vulnerable group of the population and they usually face challenges such as discrimination, reduced access to social and health services, and a lack of educational opportunities. The WHO recommends that effective interventions to address the negative consequences of alcohol use should be tailored to accommodate local contexts; mental disorders are among the high public health priority areas therefore planning and provision of prevention and treatment strategies for the negative consequences of alcohol use should be addressed (WHO 2010a:7, 10). According to the Ethiopian Public Health Association (EPHA), in Ethiopia no alcohol policy has been adopted and the adequacy of the existing laws to address the negative consequences of alcohol use is questionable (*Legal aspects ... 2007*). However, the findings of this study and other established facts indicate that priority should be given to problems of alcohol use among psychiatric in-patients in Ethiopia.

Based on the findings of this study, the management of the mental hospital should consider training mental health professionals on the dangers of alcohol use to mental health. Public awareness must be raised about the potential dangers of alcohol use among psychiatric in-patients. Health promotion programmes that are essential to change the behaviour of psychiatric in-patients, their families, and communities towards

alcohol use must be designed by the mental hospital. The hospital should challenge the factors contributing to alcohol use among psychiatric in-patients by teaching and counselling the public, adolescents and the youth, families of psychiatric in-patients, and patients (especially males, patients coming from urban areas, patients diagnosed with schizophrenia, and those whose parents use alcohol) regarding the negative effects of alcohol use.

Psychiatric in-patients should also be made aware and be informed that they must avoid alcohol use due to the possibility that alcohol use may cause new mental conditions or worsen an already existing mental condition. Mental health workers should screen all psychiatric in-patients for alcohol use using the AUDIT, and use the admission period as a golden opportunity to routinely screen and educate all psychiatric in-patients admitted to the mental hospital on the risks of alcohol use. Indeed, this should also be done in addition to providing the routine mental health services before discharge.

Programmes that help to address alcohol use among female psychiatric patients should also be available in the mental hospital, at least on out-patient level, on the short-term for those female patients who are willing to stop their harmful alcohol drinking habits. Concerned donors should also be involved in the long-term to address gender inequity in the distribution of wards and the absence of a female substance misuse ward.

The WHO (2009:7) recommends that concurrent use of psychotropic medications belonging to the same pharmacologic class should be avoided. Thus, the finding in this study that some of the psychiatric in-patients were concurrently receiving two or more classes of antipsychotics, and some others were getting two classes of antidepressants, suggests the presence of an increased risk of potential drug-drug interaction in these psychiatric in-patients. Hence, the administration of psychotropic medications and combinations may need to be revised and caution should be undertaken during treatment of psychiatric in-patients in the future. However, such a finding is not unique for Ethiopia. For instance Janssen, Weinmann, Berger and Gaebel (2004:1025) in their study (N=1075) on schizophrenic in-patients in Germany found that 24% (n=258) were prescribed more than one antipsychotic, 20.1% (n=216) were prescribed more than three psychotropic drugs, and 12.1% (n=124) were prescribed psychotropic agents from three or more different subclasses concurrently.

In Canada, thioridazine sales had been discontinued since 2005 due to the lack of safety information that supports the continued use of the drug as an antipsychotic. It is reserved to use “only for schizophrenic patients who fail to show an acceptable response to adequate courses of treatment with other antipsychotic drugs, either because of insufficient effectiveness or the inability to achieve an effective dose due to intolerable adverse effects” (*Dear doctor or pharmacist 2001; Thioridazine ... [s.a.]*). Regulatory authorities in the USA and the UK have also recommended the restriction of thioridazine prescribing, based on accumulating evidence of cardiotoxicity, to those with treatment-resistant schizophrenia (Reilly et al 2002:521). Therefore, the researcher recommends that the hospital management should caution treating doctors and psychiatric nurses in the mental hospital about the dangers of prescribing thioridazine to psychiatric patients, especially to those at risk for cardiovascular disease.

5.5 LIMITATIONS OF THE STUDY

Despite the insightful findings, some limitations of the current study must be noted.

- Although the participating patients were selected randomly, the sample size was much lower than what it would have been if the calculation for a sample size formula for finite population ($n = \frac{z^2 \times p(1-p)}{d^2}$) where N is the total number of in-patients in the hospital and $n = \frac{z^2 \times p(1-p)}{d^2}$ was used. The result using this calculation yielded 154 psychiatric in-patients but a total sample of 70 respondents was interviewed in this study. A bigger sample would have been more representative of psychiatric in-patients in the specific hospital. This may limit the generalisability of the research findings.
- No medical files could be checked for completeness or correctness of data as the registers were assumed to be complete and correct. However, this might or might not have been the case.
- Only structured interviews were conducted. More in-depth information might have been obtained by conducting individual in-depth or focus group interviews. Psychiatric in-patients may have under-reported their true consumption rates due to social desirability. Answers to questions in the AUDIT may also have been

biased because the patients could have had a problem with recalling their alcohol use. To reduce such recall bias, the researcher modified the AUDIT in order to look for alcohol drinking habits of psychiatric in-patients in the three months preceding this study.

- Only psychiatric in-patients were interviewed. However, more valuable information might have been obtained if families were also interviewed. The information provided by psychiatric in-patients was accepted as being truthful without checking any information with a family member, hospital staff or the references in the patient's medical files.
- Access to stable psychiatric patients was limited because once they had been discharged they were required to return home on the same day since there was a long queue of patients waiting to be admitted.

5.6 SUGGESTIONS FOR FUTURE RESEARCH

Although globally the literature on alcohol is fairly extensive, and several authors have stated the potential adverse effects of alcohol use on mental wellbeing, studies pertaining to psychiatric patients in Ethiopia are scarce – even more importantly, studies concerning alcohol use among psychiatric patients in the country were not found in literature. Thus, further research that will ultimately lead to policy recommendations in the area of alcohol use among psychiatric patients in Ethiopia is needed. The researcher makes the following recommendations for future research studies:

- The validation of the AUDIT in Ethiopia and using the AUDIT in future alcohol-related studies with psychiatric patients to gather information regarding alcohol use in an Ethiopian psychiatric in-patient population setting, as the AUDIT is simple to use and can be valuable in assessing the frequency and pattern of alcohol use.
- Further research should focus on the best method to provide valuable information to psychiatric in-patients about the dangers of alcohol use.

- More research is needed on effective health education methods to effectively discourage alcohol use by psychiatric patients.
- A research study should be undertaken to search for information regarding the dangers of prescribing thioridazine to psychiatric patients in Ethiopia.

5.7 CONCLUDING REMARKS

Alcohol use contributes to traumatic outcomes including injury, disability, and death. The consequences of alcohol use go beyond the psychiatric patient to include his or her family, the community and the larger social environment. Hence, in spite of the noted limitations, it is extremely important that greater attention is paid to the potential adverse effects of alcohol use on the mental, physical and social wellbeing of psychiatric in-patients in Ethiopia.

Mental health professionals must not go for thioridazine as a first-choice antipsychotic. The screening of psychiatric patients for cardiovascular diseases by the treating doctors or nurses before prescribing thioridazine as well as monitoring during thioridazine therapy is crucial. Also, routine screenings of alcohol use by psychiatric in-patients is essential, as is the promotion of health education in the hospital compound before discharge. Mental health professionals are also supposed to inform patients about the interactions of psychotropic medications with alcohol. Since the effects of harmful alcohol use also extends to the well-being and health of people around the drinker, involving their families could render positive results. If the families are informed and knowledgeable about the harm alcohol use could bring upon them as a family as well as individuals, they would be more supportive and encourage the psychiatric patient to abstain. Even before discharge and while still undergoing treatment, mental health professionals need to sacrifice much more of their time to educate and counsel psychiatric patients and their family members on positive coping mechanisms such as becoming involved in social and recreational events without drinking and having a sober peer group.

The effectiveness of the suggested recommendations must be monitored and evaluated. In order to achieve this, ongoing collaboration between the hospital and governmental and non-governmental sectors including the health sector, civil society,

the youth, women's and children's welfare, justice, education, the mass media, consumers, the alcohol industry, and religious establishments, is pivotal.

There is a saying in Ethiopia, "*(You) grazing ox, when you are grazing take care of the deep cliff beside you*". The researcher firmly believes that a psychiatric in-patient who drinks alcohol in order to find relief from boredom or who does it simply for entertainment must be made aware that the entertaining experience following alcohol use lasts only for a short while; he or she must know that this brief euphoric state will be followed by dire negative physical, mental and social consequences that can have a devastating effect on his or her already existing mental illness, on the family, and on him- or herself.

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Annexure A

Ethical clearance certificate: Research and Ethics Committee,
Department of Health Studies, Unisa

30 November 2012

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY

The Human Resource Development Administrator Directorate

The Ministry of Health

Addis Ababa

Ethiopia

Dear Sir,

I am Dr Guranda Henok Admassu, currently working as a general practitioner here in Ethiopia, and am also registered with the University of South Africa (UNISA) for a Master's degree in Public Health (MPH) in the Department of Health Studies. The title of my dissertation is **Alcohol use amongst psychiatric in-patients in a mental hospital in Ethiopia**. I am expected to complete this research in partial fulfilment of the requirement for the award of the MPH degree of UNISA.

The purpose of this study is to identify factors associated with alcohol use among psychiatric in-patients in a mental hospital in Ethiopia. This information could be used to address alcohol use amongst psychiatric in-patients and possibly enhance the future effectiveness of psychiatric patients' treatment.

The study will involve random sample of psychiatric in-patients admitted to a mental hospital in Ethiopia. Data collection with the use of structured interview schedule and a checklist to collect information from psychiatric in-patients and their corresponding

medical files will be used. The data collection will take place in a private room in a mental hospital after due consent has been obtained.

I am writing to seek approval of the study proposal. Please find attached the study proposal, the data collection instruments, a consent form, and the ethical clearance from UNISA for your perusal.

Your kind cooperation will be highly appreciated.

Regards

Dr Guranda Henok Admassu

Researcher/student

Tel: +251911354626

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Annexure B

Application letter to the Federal Ministry of Health to conduct this study

Emblem

Federal Democratic Republic of Ethiopia

Ministry of Health

Date 10/12/2012

Ref No. ET30/28/44/32

To Mental Hospital x

Addis Ababa

Subject: This Concerns A Request for Cooperation

By a letter written with Ref. No. UNISA-ET/KA/ST/29 on 30/11/12 it has been stated that that Dr. Henok Admasu Guranda is currently attending Master of Public Health in UNISA (The University of South Africa) and to conduct a study under a title ALCHOL USE AMONG PSYCHIATRIC IN-PATIENTS IN A MENTAL HOSPITAL IN ETHIOPIA, he is collecting a data. He, therefore, has requested to be issued a letter of cooperation.

Accordingly, we would like to notify that conducting a study by the expert in your office will have a vital importance for our country. Therefore, we request you to extend the necessary cooperation on your part. To this effect we have sent to you attached here with an ethical clearance sent from the university.

With regards,

Signed

Dr. Amir Aman Hagos

Human Resource Development Administrator Directorate Acting Director

CC

- To Human Resource Development Case Team
Ministry of Health

Seal

Federal Democratic Republic of Ethiopia

Ministry of Health



Annexure C

Support letter from Federal Ministry of Health of Ethiopia to conduct the study

5 December 2012

Mental Hospital X

Addis Ababa

Ethiopia

SUBJECT: REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY

Dear Sir/Madam

I am Dr Henok Admassu Guranda. I was an employee of your hospital from November 2002 to August 2007. Currently I am working as a chief general medical practitioner at Adea Clinic, Bishoftu, Ethiopia and I am also registered with the University of South Africa (Unisa) for a Masters degree in Public Health (MPH) in the Department of Health Studies (Unisa student number 46338721). In order to complete the requirements of this degree, I am expected to conduct a research project.

I would like to conduct a study at your hospital. The title of my dissertation is **alcohol use amongst psychiatric in-patients in a mental hospital in Ethiopia**. I hereby request your permission to interview psychiatric patients at your hospital about their alcohol use and gather relevant data from their respective files. This knowledge might be used to enhance the treatment outcomes of psychiatric patients in the future.

I have highlighted important points about my study as follows:

External review: The proposal for this study has been approved by the Departmental Higher Degrees Committee of the Department of Health Studies, Unisa, as indicated in the attached document. The Federal Ministry of Health also conveyed their approval to conduct this study (please find attached the support letter from the Federal Ministry of Health).

Purpose of the study: The purpose of the study is to identify factors associated with alcohol use among psychiatric in-patients in a mental hospital in Addis Ababa, Ethiopia.

Informed consent: The researcher will explain the purpose and nature of the study to every potential respondent before requesting him/her to sign an informed consent form, agreeing to be interviewed voluntarily out of his/her own free will (please find attached the informed consent form that will be used for this purpose).

Data to be collected: The study will involve a random sample of psychiatric in-patients admitted to a mental hospital in Addis Ababa, Ethiopia. Data collection will be done by conducting structured interviews, using a standardised, pre-coded, and pretested interview schedule. Patients' charts will also be given the same codes as the respective questionnaire, and relevant information will be gathered from patients' files. The researcher and a trained research assistant (who will be a psychiatric nurse working at a different institution and trained by me to conduct interviews) will take turns to conduct interviews with the psychiatric patients. This implies that one person will ask the questions while the other one records the information. In this way the interviews should be completed within a shorter period of time than could be achieved by one person and the interviewers will not get exhausted. After the completion of an interview, the relevant information from the patients' charts will be entered into the document analysis checklist.

Use of patients' charts: Information about each patient's diagnosis, length of hospital stay, prescribed psychotropic drugs, incidents that could be related to alcohol consumption, interactions of alcohol with the prescribed drugs, relapses and re-admissions, use of substances other than alcohol, and parental use of alcohol will be the clinical variables that will be recorded from each patient's chart. No form of personal identifiers will be included while collecting information from patients' charts. The researcher will be the only person to have access to a list correlating the interviewee's number with his/her medical file number. This is necessary to keep an audit trail in case the researcher should need to trace any information to a specific patient's file to verify his data and/or to respond to queries from other researchers or

from the hospital and/or health care authorities. This list will be kept locked up and only the researcher will have access to it.

Data protection: Respondents will be informed that information gathered from them would be made available only to the statistician and the supervisor of the study but that no name will be available on any completed interview schedule. Respondents will also be informed that at the completion of the study, it will be examined by designated examiners and the results of the study might get published, but no names will ever get published.

Benefits: An appropriate health education strategy could be designed, based on the research findings, to inform psychiatric patients, their family members and caretakers about the potential hazardous consequences of using alcohol simultaneously with psychotropic drugs and the potential effects on specific psychiatric conditions.

Risks: A minor risk is the possibility that certain questions regarding alcohol use may arouse psychologically distressing emotions. If this is the case, the researcher will try to calm down the affected patient and will accompany him/her to the responsible ward psychiatrist and confirms that he/she has got appropriate treatment.

Other ethical commitments: The interview will be conducted on favourable time of the day, and day of the week so as not to interfere with the regular hospital duties and comfort of the patients after discussing with the hospital management and ward managers. Psychiatric nurses working in the hospital will not be used to manage power differentials in this study.

Dear Sir/Madam, I am writing to seek your approval of the study proposal. Please herewith find attached a copy of the ethical clearance certificate from Unisa, my

study proposal, consent form and provisional data collection instruments for your examination.

Your kind cooperation will be highly appreciated.

Yours sincerely

Henok Admassu Guranda (Dr)

Researcher/Student

Mobile telephone: +251-911354626

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Annexure D

Application letter to the study hospital to conduct the study

ካለአዕምሮ ጤና ልማትም ሆነ ደህንነት የለም! There is no development or health without mental health!

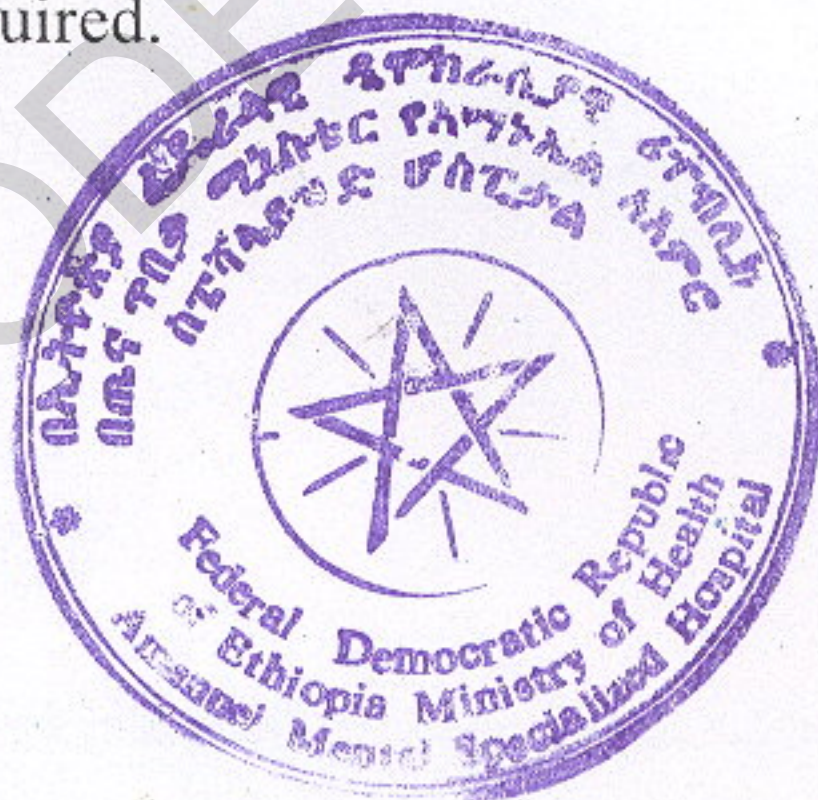


በኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ
በጤና ጥበቃ ሚኒስቴር
የአማኑኤል አእምሮ ስፔሻላይዜድ ሆስፒታል
Federal Democratic Republic of Ethiopia
Ministry of Health
Amanuel Mental Specialized Hospital

#ጥር
Ref. No Am/Psmg/wu45/4/1
ቀን
Date Feb 19. 2013

To: Dr Henok Admassu Guranda

The Ethical Review committee of the Amanuel Mental Specialized Hospital has gone through your project proposal "Alcohol use among psychiatric inpatients in Amanuel mental specialized hospital". The committee found nothing unethical in the methodology of acquiring data or in the overall content of the project Proposal. It also believes that the results of this study will contribute in filling the Knowledge gap in understanding the prevalence of alcohol use of psychiatric inpatients among Mental Health Professionals and the meaning attached to it. The committee informs you that you are allowed to continue your research in the hospital and the clinical departments are here by informed for giving you the necessary support required.



With Regards

ዶ/ር/ባ.አ. በቃና
የአዕምሮ ስፔሻላይዜድ ሆስፒታል
Dr. Lulu Bekana
Psychiatrist

የአዕምሮ ስፔሻላይዜድ ሆስፒታል
Research and Training Director

CC//

- CEO
 - Research and Training Directorate
 - Medical Director Office
- Amanuel Mental Specialized Hospital

Annexure E

Permission from the Ethical Committee of the study hospital to
conduct the study

CONSENT FORM

Consent to Participate in a Research

Title: ALCOHOL USE AMONGST PSYCHIATRIC IN-PATIENTS IN A MENTAL HOSPITAL IN ETHIOPIA

Researcher: Dr Guranda Henok Admassu

Supervisor: Prof Jeanette Maritz

You are invited to participate in a research study. You have been chosen to take part in this study because you can provide valuable information about alcohol use among psychiatric in-patients. This information could be used to address alcohol use amongst psychiatric in-patients and possibly enhance the effectiveness of psychiatric patients' treatment.

The study and its procedures have been approved by the appropriate people and by the Higher Degrees Committee of the Department of Health Studies, University of South Africa (Unisa) and Management Board of this hospital. You will be asked to reply to questions in an interview about socio-demographic data and alcohol use. The interview will take about 20 minutes. You will not receive any remuneration and the study results may be published, but your identity will not be revealed when the study is reported or published. Please feel free to ask any questions you may have about the study or about your rights as a participant. You may refuse to be interviewed without incurring any negative consequences whatsoever. You may also refuse to answer specific questions and you may end the interview at any stage.

The information will be coded and no interviewee's name will be mentioned. Your name will also not be written anywhere on the interview schedule. The research records will be kept confidential and locked up in secure place to which only the researcher has access. Once entered into a computer the data will be protected by a secure password on a computer to which only the researcher has access. After the

research report has been accepted, the completed interview schedules will be destroyed.

The data will be collected by the researcher and a research assistant, a nurse who is not working at the study hospital, specially trained by the researcher to help in data collection. The researcher will be available during the interviews should you require additional information or assistance.

If other questions occur to you later, you may contact Dr Guranda Henok Admassu, mobile tel. number +251911354626.

I have read this consent form (the above consent form has been read to me), and voluntarily consent to participate in this study.

Subject's signature _____ Date _____

I have explained this study to the above subject and have sought his/her understanding for informed consent.

Interviewer's signature _____ Date _____

Annexure F

Consent form

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**INTERVIEW SCHEDULE ON ALCOHOL USE AMONGST PSYCHIATRIC
IN-PATIENTS IN A MENTAL HOSPITAL IN ETHIOPIA**

Interviewee's identification code _____

Interviewer name _____

Date of interview _____ / _____ / _____

Ward code _____

SECTION I. Socio-demographic variables

S. No.	Questions and filters	Coding categories	Skip Pattern
101	Respondent's age at last birthday in years	_____ years	
102	Gender	1. male 2. female	
103	Religion	1. Orthodox Christian 2. Protestant Christian 3. Catholic Christian 4. Muslim 5. no religion 6. other (please specify) _____	
104	Marital status	1. never married 2. currently married 3. separated 4. divorced 5. widowed 6. cohabiting	
105	Highest school grade completed	1. No schooling 2. Church school/Koran school 3. primary (1-8 grade) 4. 9-10 grade 5. 10 complete 6. 10+1 complete 7. 10+2 complete 8. 10+3 complete 9. university drop out 10. first degree 11. other (please specify) _____	
106	Occupation	1. government employee 2. non-government employee 3. self-employed 4. student 5. retired 6. unemployed 7. other (please specify) _____	
107	Ethnicity	1. Oromo	

		2. Amhara 3. Tigre 4. Gurage 5. other (please specify)_____	
108	Residence	1. urban 2. rural	
109	Distance of residential address from the study hospital (in kilometres)	_____	
110	Monthly income (in Ethiopian Birr)	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	

Section III. The amended interview-version AUDIT questions (adapted from Babor et al 2001:17 with permission)

- The interviewer reads questions as written, and records answers carefully.
- The interviewer begins the alcohol use disorder identification test (AUDIT) by saying “Because alcohol use can affect many areas of health, it is important for us to know how much you usually drink and whether you have experienced any problems with your drinking. Please try to be as accurate as you can”.
- The interviewer then says, “Now I am going to ask you some questions about your use of alcoholic beverages in the past three months”.
- The interviewer explains what is meant by “alcoholic beverages” by using examples as beer, wine, vodka, ‘tella’, ‘tej’, and ‘arake’.
- The interviewer codes answers in terms of “standard drinks”, and encircles the right answer/s.

S. No.	Questions and filters	Coding categories	Skip Pattern
200	How often do you have a drink containing alcohol?	0. Never 1. Monthly or less 2. 2 to 4 times a month alcohol) 3. 2 to 3 times a week alcohol) 4. 4 or more times a week	If Q200 is 0 then skip to Q209&Q210
201	If Q200 is 1, 2, 3 or 4, please specify type of alcohol.	_____	
202	How many drinks containing alcohol do you have on a typical day?	0. 1 or 2 1. 3 or 4 2. 5 or 6 3. 7, 8, or 9 4. 10 or more	If Q202 =0 then skip to Q209 &210
203	How often do you have six or more drinks on one occasion?	0. Never 1. Less than monthly	If Q203=0 then skip to

		2. Monthly 3. Weekly 4. Daily or almost daily	Q209 &210		
204	How often during the past three months have you found that you were not able to stop drinking once you had started?	0. Never 1. Less than monthly 2. Monthly 3. Weekly 4. Daily or almost daily			
205	How often during the past three months have you failed to do what was normally expected from you because of drinking?	0. Never 1. Less than monthly 2. Monthly 3. Weekly 4. Daily or almost daily			
206	How often during the past three months have you needed a first drink in the morning to get yourself going after a heavy drinking session?	0. Never 1. Less than monthly 2. Monthly 3. Weekly 4. Daily or almost daily			
207	How often during the past three months have you had a feeling of guilt or remorse after drinking?	0. Never 1. Less than monthly 2. Monthly 3. Weekly 4. Daily or almost daily			
208	How often during the past three months have you been unable to remember what happened the night before because you had been drinking?	0. Never 1. Less than monthly 2. Monthly 3. Weekly 4. Daily or almost daily			
209	Have you or someone else been injured as a result of your drinking?	0. No 2. Yes, but not in the past three months 4. Yes, during the past three months			
210	Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you stop drinking altogether?	0. No 2. Yes, but not in the past three months 4. Yes, during the past three months	If Q210 is 0 then skip to Q301		
211	If Q210 is yes (2 or 4), please specify		A. who.	B. why.	C. when.
1					
2					
3					
4					
Record total of specific items for all questions excluding Q 201 & Q 211 here <input style="width: 100px; height: 20px;" type="text"/>					

Annexure G

Structured interview schedule

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Section IV. Information on patient's own perceptions about the influence of alcohol

S. No.	Questions and filters	Verbatim quotes of the respondent's answers
301	What are your views regarding the use of alcohol?	
302	What are your views regarding the effects of alcohol use?	
303	What are your views of alcohol use and mental illness?	
304	What are your views of stopping the use of alcohol?	

THANK PATIENT AT THE END!!

Annexure H

Document analysis checklist

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**DOCUMENT ANALYSIS CHECKLIST ON ALCOHOL USE AMONGST
PSYCHIATRIC
IN-PATIENTS IN A MENTAL HOSPITAL IN ETHIOPIA**

Respondent's identification code _____

Date of data collection _____ / _____ / _____

Ward code _____

S. No.	Questions and filters	Coding categories	Skip Pattern
401	Patient's diagnosis	1. Schizophrenia 2. Brief and other psychotic disorders 3. Major depression 4. Non-major depression 5. Bipolar disorder 6. Psychotic disorder due to general medical condition 7. Substance-induced psychosis 96. others (please specify) _____	
402	Length of hospital stay	_____	
403	Currently prescribed psychotropic drug/s and its/their respective dosage	1. chlorpromazine (____ mg/day) 2. thioridazine (____ mg/day) 3. haloperidol (____ mg/day) 4. trifluoperazine (____ mg/day) 5. imipramine (____ mg/day) 6. amitriptyline (____ mg/day) 7. fluoxetine (____ mg/day) 96. others (please specify) _____	

404	Incidents that could be related to alcohol consumption and /or alcohol interactions with the prescribed drugs	1. nausea, vomiting, or diarrhoea 2. malnutrition 3. alcohol dependence 4. numb, tingling, painful nerves 5. ulcer 6. liver damage 7. heart problems (hypertension/heart failure) 8. bleeding tendency 9. breathing problems 10. impotence 11. amenorrhea 12. recurrent infection 13. memory loss/confusion 14. depression 15. nervousness 16. violence, aggressive behaviour 17. attempted suicide 96. other (please specify) _____	
405A	Relapses and re-admissions	1. Yes 2. No	If Q405A is no, skip to Q406.
405B	If Q405A is yes, please specify		
	1. how many times.	_____ times	
	2. possible reason/s for relapse.	1. psychosis 2. mood symptom 3. alcohol use 4. medication non-compliance 96. other (please specify) _____	
406	History of use of other substance/s	1. Yes 2. No	If Q406 is no, skip to Q408.
407	If Q406 is yes, please specify.	_____ _____ _____	
408	Parental use of alcohol	1. Yes 2. No	

Annexure I

Confidentiality agreement with assistant interviewer

CONFIDENTIALITY AGREEMENT WITH ASSISTANT INTERVIEWER

Title: ALCOHOL USE AMONGST PSYCHIATRIC IN-PATIENTS IN A MENTAL HOSPITAL IN ETHIOPIA

Researcher: Dr Guranda Henok Admassu

Supervisor: Prof Jeanette Maritz

I, psychiatric nurse Yirga Tilahun, have agreed to conduct structured interviews to collect data for a study on alcohol use among psychiatric in-patients in a mental hospital by researcher Dr Henok Admassu Guranda (Unisa student number 46338721). I was trained in conducting structured interviews and in protecting the respondents' rights as well as the rights of the institution by the researcher. I will respect the autonomy, confidentiality and views of the respondents.

After the data collection has been completed, I will receive a stipend Ethiopian Birr 2400.00ETB (calculated as 400 Birr per day) as compensation for the time spent interviewing patients. I am not currently working in the mental hospital where the study is conducted.

I have read this confidentiality agreement form and voluntarily agree to work as a research assistant during the data collection phase of this study and accept the above mentioned conditions.

Research assistant's signature _____

Date _____

I have explained the procedures to be followed and the stipend to be paid to the above research assistant and have sought his/her agreement for involvement in this study.

Researcher's signature_____

Date_____

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Annexure J

WHO authorisation to translate and publish the interview-version
AUDIT questionnaire in the Amharic language

Authorisation of a Request to Translate and Publish the AUDIT Questionnaire in the Amharic Language for Non-commercial Research Purpose

Subject: : 107956 Audit Questionnaire Amharic
From: ABOU MRAD, Carla (aboumradc@who.int)
To: henok_admassu10@yahoo.com;
Date: Friday, November 2, 2012 6:32 AM

Dear Dr Henok Admassu,

On behalf of the World Health Organization, we are pleased to authorize your request to translate and publish the AUDIT questionnaire in the Amharic language for non-commercial research purposes. This permission is subject to the following conditions:

- This is a non-exclusive permission to translate the materials listed in the form below.
- The Translation shall be faithful to the original English text and rendered into good literary and scientific language.
- The original WHO source is appropriately acknowledged with either (i) the appropriate bibliographical reference (including publication title, author, publisher, volume/edition number, page numbers, copyright notice year or (ii) in the case of materials published on the WHO web site, the URL reference and the date accessed.
- The instrument is only to be used in a non-commercial research context and it should not otherwise be distributed on the Internet or in printed or electronic format. Any additional use requires written permission from WHO.
- The instrument should not be used for commercial purposes or for the direct or indirect promotion or marketing of products and services.
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WHO will not charge a fee for the above permission, however we would be grateful if you could send us the PDF of the translated version for our records.

We thank you for your interest in WHO and our published information.

Kind regards,

Carla

Carla ABOUMRAD

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Licensing rights <http://www.who.int/about/licensing/classifications/en/index.html>

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Innovation, Information, Evidence and Research Cluster

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Tel +41 22 791 22 10 - Fax +41 22 791 48 94 Office: 4021

Annexure K

Evidence of service of a statistician

From: Wondimu Ayele, Statistician

Federal Ministry of Health, Addis Ababa, Ethiopia

Date: 22nd January 2013

Re: Professional support for MPH mr. Guranda Henok admassu Final MPH dissertation

Dear Professor

I am Wondimu Ayele senior Statistician at Policy planning Directorate, in Federal Ministry of Health, Addis Ababa, Ethiopia. I have MSC in statistics and research experience. Student, Guranda Henok admassu (Unisa student number: 46338721). approached me for requesting Statistician Support. I was glad to extend my support for his research entitled **'ALCOHOL USE AMONGST PSYCHIATRIC IN-PATIENTS IN A MENTAL HOSPITAL IN ETHIOPIA' of 2013.**

The following major technical support were given

- Feedback on write up of sampling methods,
- Appropriate method of data analysis determined and tested for the study based on the student proposal. re-analyze of the data using the best possible Statistical methods .This involved choosing Statistical modeling to control the effect of confounders
- Data quality management issues incorporated
- Analysis data using statistical software.
- Interpretation of Statistical figures and values
- Finding and the best way to describe and display the data

Finally, I would like to confirm that the student report maintain the necessary Statistical and ethical standard required by MPH student. I have attached my Identification card and MSC paper for your confirmation. I will communicate you for any further issues.

With best regards
Wondimu Ayele



Annexure L

Evidence of service of translator



Date 14/12/2012

**An Affidavit Subscribed in Accordance with Ethiopian Civil
Procedure No. 205**

I, the affiant named Ashenafi Teklay, hereby would like to bring the following into your attention.

I am a conversant both an English and Amharic. I am a chief translator with license and competence as well as qualification, Masters of Foreign language, to translate legal documents. Accordingly, I have translated the following documents:

1. Interview schedule (from English into Amharic)
2. Consent form (from English into Amharic)
3. Letter from Ministry of Health (from Amharic into English)

Correctly to the best of my knowledge and belief. In witness whereof, I have subscribed my signature here under.

Ashenafi Teklay



Annexure M

Original AUDIT questionnaire Vs modified AUDIT questionnaire

ANNEXURE M

The original AUDIT questionnaire Vs modified AUDIT questionnaire

• The 'original' interview-version AUDIT questionnaire (Babor et al 2001:17)

<p>1 How often do you have a drink containing alcohol? (0) Never [Skip to Qs 9-10] (1) Monthly or less (2) 2 to 4 times a month (3) 2 to 3 times a week (4) 4 or more times a week</p> <p style="text-align: right;"><input type="checkbox"/></p>	<p>6 How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily</p> <p style="text-align: right;"><input type="checkbox"/></p>
<p>2 How many drinks containing alcohol do you have on a typical day when you are drinking? (0) 1 or 2 (1) 3 or 4 (2) 5 or 6 (3) 7, 8, or 9 (4) 10 or more</p> <p style="text-align: right;"><input type="checkbox"/></p>	<p>7 How often during the last year have you had a feeling of guilt or remorse after drinking? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily</p> <p style="text-align: right;"><input type="checkbox"/></p>
<p>3 How often do you have six or more drinks on one occasion? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily <i>Skip to Questions 9 and 10 if Total Score for Questions 2 and 3 = 0</i></p> <p style="text-align: right;"><input type="checkbox"/></p>	<p>8 How often during the last year have you been unable to remember what happened the night before because you had been drinking? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily</p> <p style="text-align: right;"><input type="checkbox"/></p>
<p>4 How often during the last year have you found that you were not able to stop drinking once you had started? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily</p> <p style="text-align: right;"><input type="checkbox"/></p>	<p>9 Have you or someone else been injured as a result of your drinking? (0) No (2) Yes, but not in the last year (4) Yes, during the last year</p> <p style="text-align: right;"><input type="checkbox"/></p>
<p>5 How often during the last year have you failed to do what was normally expected from you because of drinking? (0) Never (1) Less than monthly (2) Monthly</p>	<p>10 Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you stop drinking altogether? (0) No (2) Yes, but not in the last year (4) Yes, during the last year</p>

(3) Weekly (4) Daily or almost daily	<input type="checkbox"/>
	Total <input type="checkbox"/>

• The modified interview-version AUDIT questionnaire (modified by the researcher)

<p>1 How often do you have a drink containing alcohol? (0) Never [Skip to Qs 9-10] (1) Monthly or less (2) 2 to 4 times a month (3) 2 to 3 times a week (4) 4 or more times a week</p> <input type="checkbox"/>	<p>6 How often during the past three months have you needed a first drink in the morning to get yourself going after a heavy drinking session? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily</p> <input type="checkbox"/>
<p>1.1 If Q1 is 1,2,3 and 4, please specify type of alcohol.</p>	
<p>2 How many drinks containing alcohol do you have on a typical day when you are drinking? (0) 1 or 2 (1) 3 or 4 (2) 5 or 6 (3) 7, 8, or 9 (4) 10 or more</p> <input type="checkbox"/>	<p>7 How often during the past three months have you had a feeling of guilt or remorse after drinking? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily</p> <input type="checkbox"/>
<p>3 How often do you have six or more drinks on one occasion? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily <i>Skip to Questions 9 and 10 if Total Score for Questions 2 and 3 = 0</i></p> <input type="checkbox"/>	<p>8 How often during the past three months have you been unable to remember what happened the night before because you had been drinking? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily</p> <input type="checkbox"/>
<p>4 How often during the past three months have you found that you were not able to stop drinking once you had started? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily</p> <input type="checkbox"/>	<p>9 Have you or someone else been injured as a result of your drinking? (0) No (2) Yes, but not in the past three months (4) Yes, during the past three months</p> <input type="checkbox"/>
<p>5 How often during the past three months have you failed to do what was normally expected from you</p>	<p>10 Has a relative or friend or a doctor or another health worker been concerned about your drinking</p>

because of drinking? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily	or suggested you stop drinking altogether? (0) No (2) Yes, but not in the past three months (4) Yes, during the past three months																				
<input type="checkbox"/>	<input type="checkbox"/> 10.1 If Q10 is yes(2 or 4), please specify <table border="1" data-bbox="836 409 1412 724"> <thead> <tr> <th></th> <th>A.who.</th> <th>B.why.</th> <th>C.when.</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		A.who.	B.why.	C.when.	1				2				3				4			
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