

**PREVALENCE OF MENTAL DISTRESS AND ASSOCIATED FACTORS  
AMONG UNDERGRADUATE STUDENTS AT UNIVERSITY OF  
HARGEISA SOMALILAND**



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**A RESEARCH THESIS REPORT TO BE SUBMITTED TO THE DEPARTMENT OF  
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**JIMMA, ETHIOPIA**

**JUNE, 2014**

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## Abstract

**Background:** Mental distress is becoming a common health problem among university students globally. Empirical findings have confirmed that the student population does have a higher prevalence of mental disorder than is found in the general population.

**Objective:** This study aimed to investigate the prevalence of mental distress and associated factors among the undergraduate students at University of Hargeisa, Somaliland in 2013.

**Method:** An institution based cross-sectional study was conducted among a sample of 600 undergraduate students at the University of Hargeisa from October 1 to 30, 2013. Study subjects were selected using stratified random sampling. The Self Reporting Questionnaire (SRQ-20) was used to assess mental distress. Data was analyzed using by SPSS version 16 for windows. Bivariate logistic regression was done to explore factors associated with mental distress and find out candidate variables for the multivariate logistic regression. Multivariate logistic regression was conducted to identify predictors of mental distress.

**Results:** The point prevalence of mental distress was found to be 19.8%. Female students were at higher risk of having mental distress than male students {AOR= 2.78; 95% CI (1.69, 4.55)}. Students who had monthly income of up to \$100 were at higher risk of mental distress than those who had greater than \$100{AOR=1.96; 95% CI (1.15, 3.35)}. Students who did not have satisfying relationship with their friends were at higher risk of mental distress than students who had satisfying relationship with their friends {AOR= 2.55, 95%CI (1.12, (5.79))}.

**Conclusions:** The prevalence rate of mental distress among the regular under-graduate students at UoH was found to be 19.8%. Female gender, low monthly income and unsatisfying relationship with friends were the contributing factors for mental distress among the students of UoH in this study. Recommendations are given to those involved accordingly. To UoH administration, to create mechanisms students can interact positively together, establish student advisory system and create student mental health clinic. To the Researchers is recommended to further study this topic with different and validated instrument and lastly to the ministry of health to integrate mental health care services to the university students.

**Key words:** Mental distress, Undergraduate students, Self reporting questionnaire, Somaliland.

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## **Abbreviations and acronyms**

AOR= Adjusted Odds Ratio

AUDIT= Alcohol Use Disorder Identification Test

COR = Crude Odds Ratio

CGPA= Cumulative Grade Point Average

DALYs= Disability Adjusted Life Years

FOST= Faculty of Sciences and technology

FOE = Faculty of Education

FOL = Faculty of Law

FBA= Faculty of Business administration

FoIA= Faculty of Islamic and Arabic

FOM= Faculty of medicine

FOICT= faculty of Information, communication and technology

SPSS= Statistical Package for Social science Studies (applied for any research)

SRQ= Self Reporting Questionnaire

WHO = World Health Organization

UoH= University of Hargeisa

YLDs= Years Lived with Disability

YLLs= Years of Life Lost due to premature mortality



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# **1. Introduction**

## **1.1 Background**

Mental Health is defined as the successful performance of mental functions in terms of thought, mood, and behavior that results in productive activities, fulfilling relationships with others, and the ability to adapt, change, and cope with adversity(1). Mental distress is feeling of upset, stress, anxious, depressed, and any emotional and psychological symptoms which you may feel hindering normal healthy functioning and mainly it encompasses symptoms of common mental disorders, anxiety and depression (1).

In a 2010 systematic analysis for the Global Burden of Disease Study, on Disability-adjusted Life Years (DALYs) for 291 diseases and injuries in 21 regions in between 1990–2010, reports Mental and behavioral disorders account for 11% of Disability-adjusted life years (DALYs) (2). Mental and substance use disorders were the leading cause of years lived with disability (YLDs) worldwide. Such disorders accounted for 8·6 million YLLs (years of life lost) or 0·5% of all YLLs and 175·3 million YLDs (years lived with disability) or 22·9% of all YLDs. Depressive disorders accounted for 40·5% of DALYs caused by mental and substance use disorders, with anxiety disorders accounting for 14·6%, illicit drug use disorders for 10·9%, schizophrenia for 7·4%, bipolar disorder for 7·0% (3).

Mental health has been an underfunded and neglected sector in Somaliland. It is estimated that the prevalence of mental health disorders in Somaliland is higher than in other low-income countries (one person out of three is or has been affected by some kind of mental illness). War traumas, poverty, unemployment and substance abuse is thought to be the causes. There is a very poor and partial understanding of mental health by the general public. With approximately 3.5 million inhabitants, there is no single psychiatrist at all in the country. (4). There are no studies done in prevalence of mental distress among university students in Somaliland yet, despite they are studying in a difficult situation and this study is intended to assess their mental distress and associated factors at university of hargeisa undergraduate students.

## **1.2 Statement of the problem**

The health of university students has been the subject of increasing focus in recent years globally. Many Studies confirm that multiple protective and risk factors are involved in the mental or psychological well being and distress of university students (5).As they belong to a vulnerable age group, students frequently come to the college with already existing mental health problems (6). Students are regarded as the national capital and the top investment for the future development of any country. Therefore, university education should provide a good atmosphere, cultivating a healthy personality in students and mental health promotion activities (7).

Mental health problems can have a profound impact on university students' functioning. At the individual level, they can affect all aspects of physical, emotional, cognitive and interpersonal functioning. They also have a negative impact on the academic performance- students with higher levels of mental distress have higher test anxiety and lower self-efficacy (5). Furthermore, students with mental health problems influence many other people on campuses, including roommates, classmates, faculty members and staff.

Rates of mental disorders in collage-aged groups ranged from 8% (in the Netherlands) to 57% (for young people receiving services in five sectors of care in San Diego, California, USA). The Australian National Survey of Mental Health and Well Being reported that at least 14% of adolescents younger than 18 years were diagnosable with a mental or substance use disorder in 12 months and this figure rose to 27% in the 18–24 year age-group(8).

At least one out of every four to five young people in the general population will suffer from at least one mental disorder in any given year, although much less information is available on burden in developing countries and substantial cross-cultural variations are evident (8,9). Some cultural factors might be protective, for example parental involvement in young people's decision-making and the tendency to form friendships within one's cultural group (10), whereas others might have the opposite effect, such as restricted autonomy for women in decision making ( 11).

Mild, moderate and severe levels of stress and even burnout have been documented in university students (12). Family and interpersonal problems, examinations, outside class assignments and financial concerns were identified as the most common stress triggers (13). It has been widely accepted that hopelessness is the most important risk factor for suicide, while Spirituality, on the other hand, has been negatively correlated with hopelessness and positively correlated with preference for group counseling modalities (14).

Study done in turkey on the risk factors of the students' suicidal thoughts, Female gender, school problems, family relationships, anger expression, hostility, and interpersonal sensitivity were found to be risks of suicidal thinking (15). On the other hand, perfectionism, a common trait among students with high grades, might predict anxiety symptoms, whereas the accompanying loneliness adds to the incremental validity to predict depression and anxiety symptoms (16). It is widely accepted that deliberate self-harm is yet another major problem among young people and it has been identified as one of the key mental health problems affecting students in study done in oxford university students. A high correlation was found between self-harm and depressed mood, difficulties of identity, substances and illicit drug use (17).

Mental health affects the level of personal development and any knowledge that helps psychological adjustment to university life could promote personal qualities in university students (7). Therefore until now there were no data about the mental health of students in universities of Somaliland, and this study was the first to be done. Importance of this study was to provide information regarding to the prevalence and associated factors of mental distress of undergraduate students at University of Hargeisa, since they were, like any other students, more vulnerable to mental distress if not were at more riskier considering the economical, political and the academic isolation from the rest of the world students are suffering by the fact that Somaliland is not yet internationally recognized. The other significance in this study is to know the extent Khat, which is legal and highly consumed in Somaliland, may have contributions to the mental distress in university students.

## **2. Literature review**

The largest psychometric study of mental distress of students done so far indicated that the prevalence rate for elevated psychological distress among Canadian undergraduate university students was 30% (18). Comparable result was found by a British study and the prevalence rate was found to be 41% (19). In a study done in Haremaya University in Ethiopia using SRQ-20 with a cutoff of 11 and above, found a prevalence of mental distress of 19.3% (20). In southern Ethiopia in Hawassa University, study in 2007; found a prevalence of 49% of mental distress among the students (21). In 2011 cross-sectional study of mental distress among Adama University Ethiopia, using SRQ-20 with a cutoff point of 11 and above, found a prevalence of 21.6% of student mental distress (22). In 2001, research conducted in Addis Ababa to assess the prevalence of mental distress among medical students, using SRQ-20 tool, showed 32.6% one month prevalence of mental distress (23).

Study on Psychological morbidity, sources of stress among undergraduate medical students of Nepal using general health questionnaire in 2006 found that the overall prevalence of psychological morbidity was 20.9% (24). Study done on levels and sources of stress, measured in general health questionnaire, assessed at three British universities showed estimates of prevalence of emotional disturbance was 31-2% (25). In Malaysian University Students study on Prevalence and Associated Factors of Emotional Disorder, had shown a prevalence of 48.3% (26).

Study of psychological stress in undergraduate medical students at S. N. Medical College, Bagalkot, Karnataka, India, found that, 42.63% of the study subjects had experienced less/moderate stress and 47.01% of them had experienced severe stress (27). According to a research conducted in 2008, assessing the prevalence of mental distress and self reported treatment rate among medicine, law, psychology and mechanical engineering students in University of Adelaide, Australia, has resulted that of the 955 undergraduate students who completed the mental distress scale, 48% were mentally distressed which equated to a rate 4.4 times higher than that of age-matched peers in the community (11%) (28).

Among the undergraduates from five universities in Srilanka, 39.8% had scores for mental distress (29). Research conducted in Ziauddin Medical University in Karachi, Pakistan to assess anxiety and depression levels among medical students of a private university by using a self-

administered anxiety and depression questionnaire was found out that 60% students had anxiety and depression. Prevalence of anxiety and depression in students of 4<sup>th</sup> year, 3<sup>rd</sup> year, 2<sup>nd</sup> year and 1<sup>st</sup> year was 49%, 47%, 73%, and 66% respectively (30).

## **2.1 Socio-demographic Variables**

Since stress is a result of the ongoing transaction, or interactions between an individual and his environments and not an independent or inherent condition in the person or the milieu, how everyday stimuli are perceived and interpreted is inevitably dependent on a person's psychosocial makeup. Hence, the study of the relationships between psychosocial factors and mental distress or wellness can potentially uncover important information such as the pathways of stress genesis, possible buffering factors along with other complex associative interactions (31).

### **2.1.1 Age and mental distress**

There is a tendency of mental illnesses, including panic, generalized anxiety and somatoform disorders, occurring in younger age. The highest prevalence of mental illness were found in the 25 to 34-year age group according to a U.S. study and other studies also documented more psychopathology in younger adults than older cohorts.

In terms of the association of age to psychological or mental well-being, a study of Norwegian first year college students did not find any correlation between age and mental distress (34). Nonetheless, this finding might be due to the narrow age range of the studied population which is university freshmen. In the general population, there has been indication that association may exist between age and depression (35).

### **2.1.2 Gender and mental distress**

Numerous studies have shown that gender is a powerful predictor of mental distress. It has been well-established that the prevalence of depression, the life time risk of depression and anxiety are higher in women than in their male counterparts (36, 37). The preponderance of female psychopathology or mental distress is also demonstrated in the student population.

Research conducted in 2001 in Addis Ababa, Ethiopia, to assess the prevalence of psychological distress among medical students, showed that females scored symptoms of mental distress from SRQ more often than males, but the difference was not statistically significant (23).

In study of Prevalence and Associated Factors of Emotional Disorder among Malaysian University Students study female gender was associated with higher risks of emotional disorder (26). The same trend was indicated for medical students, as female medical students reported higher perceived academic stress and had higher increase in perceived stress from the first to the third year than their male colleagues, even though such difference leveled off and became insignificant during internship (38). This finding was in alignment with the findings from studies of American and Canadian medical students that not only did women exhibit a higher level of mental distress; they also showed a greater elevation in mental distress over the course of their studies (39).

A recent cross sectional study done in University Of Belgrade, Faculty of medicine on gender differences in academic stress and burnout among medical students in final years of education by using self-administered General health questionnaire( GHQ-12) and Maslach Burnout inventory (MBI), has resulted that female students assessed their physical health status and general stress level as worse compared to males (40).

A cross sectional study done in 2011 in Saudi Arabia on stress and its effect on medical students at college of medicine by using Kessler's scale (K10) found that prevalence of stress was higher among females than among males (75.7%) vs. (57%) (41).

### **2.1.3 Relationship and mental distress**

Research has generally shown that the presence of a stable partner is associated with lower mental distress, higher level of general subjective well-being and better life satisfaction (42, 44).

Married students reported lower stress than their single counterparts and had a reduced level of stress in the subsequent year following the marriage. Interview sessions supported the hypothesis that marital partners reduce mental distress through the provision of emotional support to their spouses (39). On the other hand, not being married correlates with higher mental distress and have unfavorable impact on one's social life, which is an integral part of student life and also an essential element for the sustenance of psychological well-being (45).



## **2.2 Academic related factors**

Stress is a normal part of a student's life as they have to constantly deal with course work, assignment deadlines and exams, etc. Nonetheless, academic pressure does play a determining role the mental health for students according to studies. Academic pressure can also pose conflicts with extracurricular activities (47) and have unfavorable impact on one's social life (45), which is an integral part of student life and also an essential element for the sustenance of psychological well-being. Academic concern is often rated as the highest source of stress by university students (46, 47). In an Australian study, two thirds of the students expressed feelings of being overwhelmed by academic demands (48). Common stressors for students include various forms of evaluation such as assignments or examinations, heavy workload and competition between peers (49-50).

By 2007 cross-sectional study conducted to assess Distress Levels and Self-Reported Treatment Rates for Medicine, Law, Psychology and Mechanical Engineering Tertiary Students in Australia the non-health disciplines were significantly more distressed than the health disciplines 58% of law, 52% of mechanical engineering followed by 44% of medical students and 40% of psychology students. Mechanical engineering students were the least likely to seek help as revealed (28).

A research conducted in Uludag University Bursa, Turkey show that Depression, anxiety and stress levels of moderate severity or above were found that first- and second-year students had higher depression, anxiety and stress scores than the others. Students who were satisfied with their education had lower depression, anxiety and stress scores than those who were not satisfied (51).

In a 2010 research in Australia, the estimated prevalence for mental health problems was 19.2% and psychological distress was associated with disability and lower academic achievement (52). Research conducted in Ziauddin Medical University in Karachi, Pakistan to assess anxiety and depression levels among medical students of a private university in the year 2003 by using a self-administered Aga Khan University Anxiety and Depression Scale (AKUADS) which has higher specificity, sensitivity and predictive values than SRQ showed that Prevalence of anxiety and depression in students of 4th year, 3rd year, 2nd year and 1st year was 49%, 47%, 73% and 66%

respectively. It was significantly higher in 1st year and 2nd year, as compared to 3rd and 4th year (30).

In a research conducted in the University of Cape Town South Africa, significant difference was found between year of study and the total mental distress score. First-year undergraduate students reported less distress than subsequent year undergraduate students. Analysis conducted to explore whether initial level of anxiety-depression has effect on students academic performance show that there is a strong and significant relationship between high levels of anxiety and poor examination results (53). As reported by a research conducted to assess mental distress among medical students used in SRQ in Addis Ababa University, the risk of mental distress decreases as year of study advances in the medical school (23).

In 2006-2007 study to assess the prevalence of mental distress of undergraduate students in Hawassa University using SRQ-20, highest levels of mental distress were observed among freshman students than other academic years of study. The mean CGPA among those who have mental distress was 2.72, while this mean CGPA among those who have no mental distress was 2.86. This difference in mean score of CGPA among students having mental distress and students who don't have mental distress was statistically significant (21).

### **2.3 Relational satisfaction and mental distress**

Social support is an important human need and the desire to form close attachments with others is basic inherent motivation that is vital in sustaining one's psychological/mental as well as physical wellbeing (54). Not only does social network provide a sense of security and emotional support during stressful time, it also offers concrete support in time of needs (55). For students, friends can provide companionship as well as instrumental support during the course of studies which in turn makes student life more pleasurable and manageable. In the absence of adequate social support, feelings of loneliness emerge.

In study done in University of Michigan , USA in 2009 on social support and mental health among college students found that students with low quality social support, as measured by the multidimensional scale of perceived social support, were more likely to experience mental health problems, including a six-fold risk of depressive symptoms relative to students with high quality social support (56).

## **2.4 Substance use and mental distress**

As evidenced by study from Australia in 2011, university students who score high in Alcohol use identification scale (AUDIT) have higher psychological distress score on Kessler depression assessment scale than those who score low (57). Research conducted in Addis Ababa to assess the prevalence of mental distress among medical students showed that students who use substances, reported symptoms of mental distress more often than non users, but the difference was not statistically significant (23).

A cross-sectional community based study conducted in Jimma town including 1200 individuals from October 15 to November 15, 2009 using self reporting questionnaire found that mental distress and khat use have significant association and the study conclude that the high rate of khat use among the young person's calls for public intervention to prevent more serious forms of substance use disorders (58).

A cross sectional study was conducted in January 2001 in the four colleges found in North West Ethiopia revealed that 13.1 % life time prevalence rate of cigarette smoking and 26.7 % life time prevalence rate of khat chewing. The current prevalence of cigarette smoking was found to be 8.1 % and that of khat chewing 17.5 % (59).

In a study done in higher education students in Jazan Saudi Arabia found current Khat chewing prevalence among higher education students to be 23.1%, significantly higher among males at 38.5% than among females 2.1% Life time Khat chewers students were 24.8% for males at 40.5%, significantly higher compared with females 3.7%. Univariate analysis revealed that gender of student, smoking status of student, friend's smoking and Khat chewing, were associated with a significant high risk of Khat chewing (60).

## 2.5 Conceptual Frame work

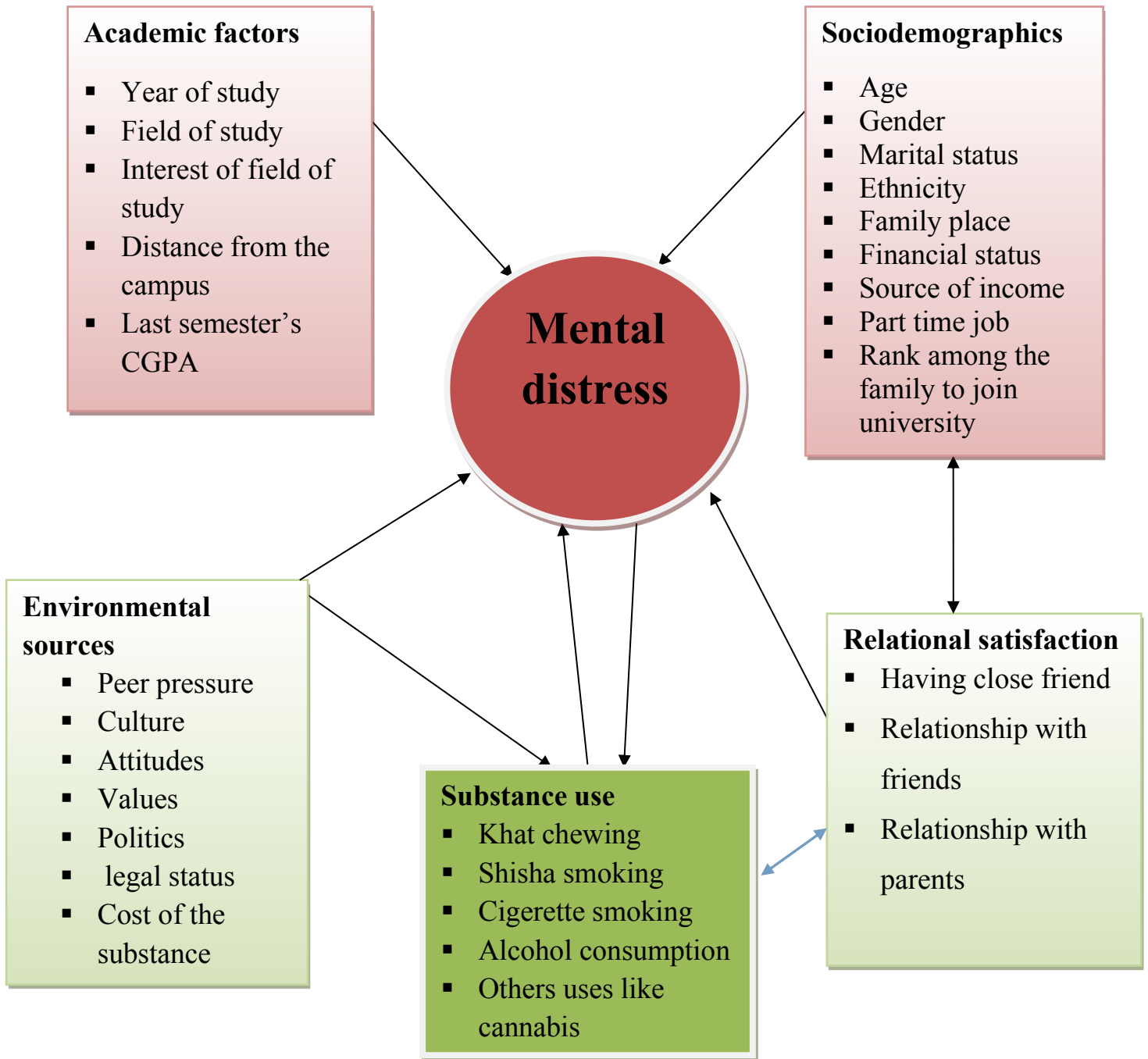


Figure 0- 1 Conceptual framework of mental distress and associated factors of University of Hargeisa students, October, 2013 (Dyrbye et.al, 2006)

## **2.6 Significance of the study**

By the fact that most lifetime mental disorders have their first onsets during or shortly before the typical college age and these problems may be precipitated or exacerbated by the variety of stressors in college life, An important understanding of mental health in this setting might be readily translated into intervention plans into multiple campuses and thus reach a large proportion of young adult populations at an early time.

In Somaliland, which is not yet recognized, university students un-like in other places has certain challenges and obstacle which adds to the existing constraints of students in general. University Setups in Somaliland differ in others. In one way they don't provide dormitories to the students and students live outside campuses. In onother, Students face challenging to finance their education since they should pay all costs of their education, like school fee, textbooks, travels and others. Further more students at Somaliland Universities suffer from academic isolations from the rest of the world due to the non-recognition, which limits levels of knowledge exchange with the rest of the world. This might cause them feel hopeless in achieving on their educational aspirations, risking them on using substances like khat which is prevalent throughout Somaliland.

Hence, with these overall challenges, University of Hargeisa has become a well positioned place to undertake on such study to investigate on level of mental distress of undergraduate students and to promote mental health interventions among young people in Somaliland. The result of this study will help in planning programs that enhance student's overall mental well being. This will result students with adequate adaptations, achieving expected performances, minimized student's dropouts and skilled healthy man power that can pursue career in their different fields of study. In this way universities will produce healthy young educators who will contribute to the development of the country.

### **3. Objectives of the study**

#### **3.1 General Objective**

- To determine the prevalence of mental distress and associated factors among regular undergraduate students at university of Hargeisa, 2013.

#### **3.2 Specific Objectives**

- To determine the prevalence of mental distress among regular undergraduate students at University of Hargeisa, 2013.
- To identify socio-demographic factors associated with mental distress among regular undergraduate students in University of Hargeisa, 2013.
- To assess substance use related factors associated with mental distress among regular undergraduate students in university of Hargeisa, 2013.
- To explore common stressors experienced by the students at University of Hargeisa, 2013.

## **4. Methods and Materials**

### **4.1 Study area and period**

Somaliland is an unrecognized self-declared de facto sovereign state that is internationally recognized as an autonomous region of Somalia. The government of Somaliland regards itself as the successor state to the British Somaliland protectorate, which was independent on June 26, 1960 as the State of Somaliland before uniting with the Trust Territory of Somalia (the former Italian Somaliland) on July 1, 1960 to form the Somali Republic. Somaliland is bordered by Ethiopia in the south and west, Djibouti in the northwest, the Gulf of Aden in the north, and the autonomous Punt land region of Somalia to the east. In 1988, the Siad Barre regime committed atrocities against the people of Somaliland, which were among the events that led to the Somali Civil War. The war left the economic and military infrastructure severely damaged. After the collapse of the central government in 1991, the local government, led by the Somali National Movement (SNM), declared independence from the rest of Somalia on May, 18, 1991 of the same year. Since then, the territory has been governed by an administration that seeks self-determination as the Republic of Somaliland. The local government maintains informal ties with some foreign governments, who have sent delegations to Hargeisa. Ethiopia also maintains a trade office in Somaliland. However, Somaliland's self-proclaimed independence remains unrecognized by any country or international organization. Since Somaliland is unrecognized, international aid donors have found it difficult to provide aid. As a result, the government relies mainly upon tax receipts and remittances from the large Somali Diaspora which contribute immensely to Somaliland's economy.

The data in this study was collected from the University of Hargeisa in Somaliland from 1st -30<sup>th</sup> in October 2013. The University of Hargeisa is one of the first public higher educational institutions in Somaliland that was established in 1999 by the government. The university has nine faculties which gives the bachelor degrees and has one postgraduate diploma on peace and development studies. Currently the number of students enrolled regularly the university is 6000 students. The life of the university students in Somaliland is different from other students in the world especially in developed countries. Students are not provided dormitories and most of their

time they spend and live on outside of the campus. Students or their relatives have to pay all their expenses of their education including the university fees. Almost all the students' mother tongue is Somali language but the medium of education is in English language and their English proficiency is good. Khat is legal and highly consumed in Somaliland while alcohol is illegal and rarely seen inside the major town of Somaliland.

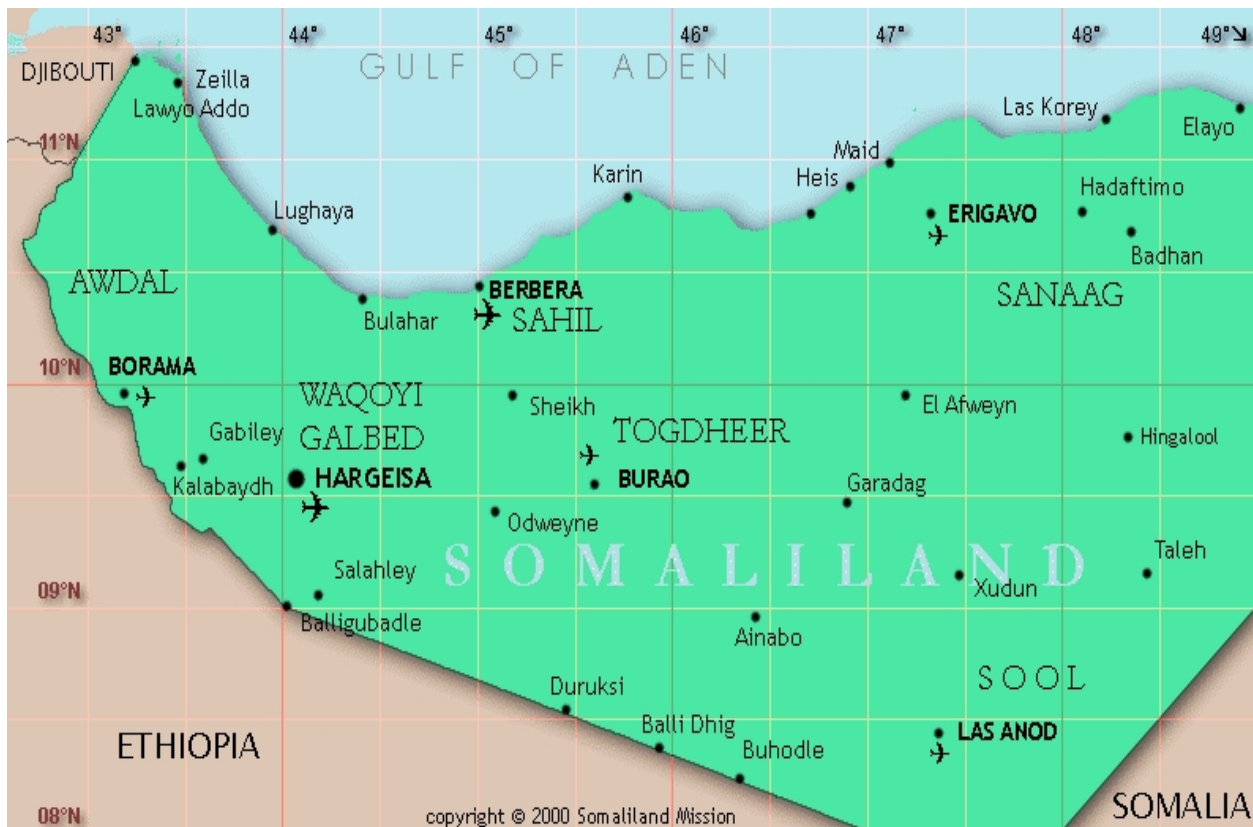


Figure 0-2 Map of Somaliland



## 4.2 Study design

The design of the study was a descriptive cross-sectional study.

## 4.3 Study Population

### 4.3.1. Source population

- All regular undergraduate students at University of Hargeisa.

### 4.3.2 Study population

- A sample of regular undergraduate students at University of Hargeisa who fulfill the inclusion criteria constituted the study population in 2013.

## 4.4 Inclusion and exclusion criteria

### 4.4.1 Inclusion criteria

- All Regular undergraduate Students who were registered in the office of the registrar and was attending their classes during the study period at the University of Hargeisa.

### 4.4.2 Exclusion criteria

- Those students who are not willing to participate in the study during the data collection period.
- Students who are too sick to fill the questionnaire during the data collection period

## 4.5 Sample size determination and sampling technique

### 4.5.1 Sample size determination

The sample size was calculated from single proportional formula by using proportion of mental distress among Hawassa University students which was 49% (22) with the scale of 'SRQ-20 items A four percent (4%) margin of error was allowed in the study and standardized normal distribution at 95% CI. By using those parameters

$$n = Z_{\frac{\alpha}{2}}^2 \frac{P(1-P)}{d^2}$$

$$n = 1.96^2 \times \frac{0.491(1-0.491)}{(0.04)^2} = 600$$

Where;

n- Was the minimum sample size required

P- Proportion of university students with psychological distress of study at Hawassa University (20)

d- The margin of sampling error tolerated which was (4%) in this study.

$Z_{\alpha/2}$  the standard normal variable at  $(1-\alpha)$  % confidence level and,  $\alpha$  is mostly 5% i.e., with 95% confidence level.

The total number of students at the University of Hargeisa was 6000; by finite population correction formula that was used the final sample size became;

$$n_f = \left( \frac{n}{1 + \frac{n}{N}} \right)$$

$$n_f = \left( \frac{600}{1 + \frac{600}{6000}} \right)$$

$$= 545$$

For possible non response during the study the final sample size was increased by 10% to  $n = 545 + 10\%$  which is  $55 = 600$

#### ***4.5.2 Sampling technique***

The study participants were selected by using stratified random sampling technique. Sample size for each department was allocated according to their proportion to the number of students in the each department by using this formula

$$n_1 = \frac{N_1 \times n}{NT}$$

Where

$n_1$  = sample from department 1

$N_1$  = total number of students in department 1

$NT$  = total number of students in the selected faculties and

$n$  = sample size

A list of students' identification number was taken from the registrar office to select the study unit. Systematic random sampling was used to select from subjects in each respective classes and the first start student was selected randomly using lottery method. .

The following pictorial scheme shows the sampling technique and sample size of each section graphically.

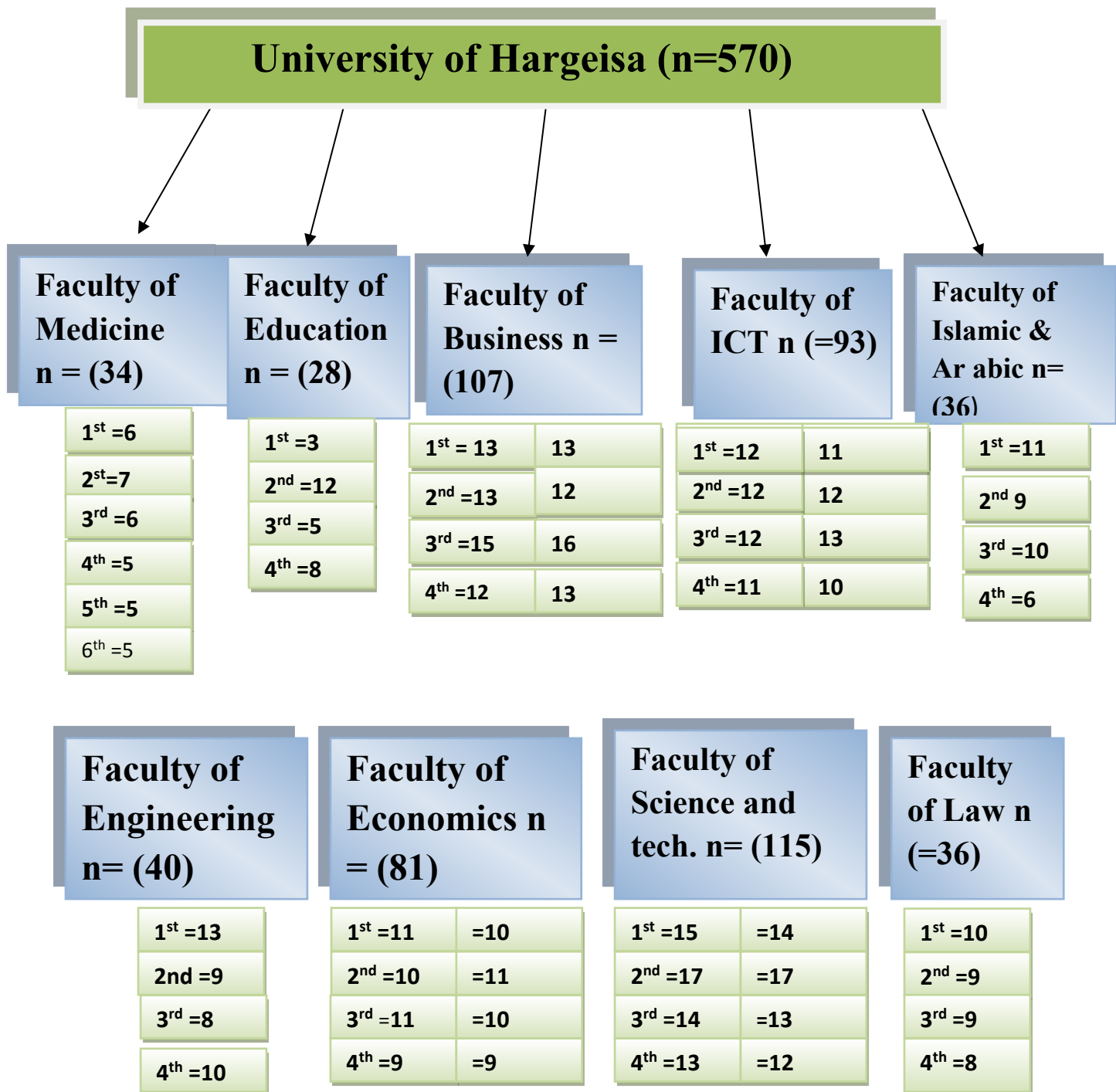


Figure 0-3 Schematic table on sampling of students at University of Hargeisa, October, 2013

## 4.6 Study variables

### 4.6.1. *Dependent variable*

#### *Mental Distress*

### 4.6.2. *Independent variables*

#### **Socio-demographic variables**

Gender

Age

Ethnicity

Religion

Marital status

Family place

Financial status

Source of financial support

Part time job

#### **Academic related factors**

Year of study

Field of study

Interest of field of study

Distance from campus

Cumulative GPA

Having close friend

Relationship with friends

Relationship with parents

#### **Substance related variables**

Khat chewing

Cigarette smoking

Alcohol consumption

Use of 'hashish'/'Shisha' and other

## 4.7 Data collection procedures

### 4.7.1 *Instrument*

The self reporting questionnaire (SRQ-20) in English version was used for data collection in this study. This instrument was developed by the WHO to screen for psychiatric morbidity in primary health care settings and community in low-income countries (61). The SRQ-20 is not expected to diagnose mental illness but was designed to indicate mental distress. It is used as a first-stage screening instrument for the second-stage clinical interview. The questions ask about

features of common mental disorders, particularly anxiety and depression. SRQ-20 (self reporting questionnaire with twenty items) is now the most widely used version of the instrument and was used in this study. SRQ-20 was supposed to be self-administered, with 'yes' or 'no' response to each question. Respondents were asked about experiencing symptoms of mental distress over the past 1 month with a cutoff of 11 and above out of 20 scores of mental distress. There were no problems encountered with using (SRQ-20) in English version in this study.

The total questionnaire had three parts. Part I contains socio-demographic characteristics, supplemented with one open question to assess source of stressors present. Part II, contains SRQ-20 to screen for mental distress. Part III are questions related with substance use like khat, Cigarette alcohol, Shisha and others.

#### ***4.7.2 Data collectors' selection and training***

Data was collected by two nurses at Hargeisa hospital and two medical students at Hargeisa University. Supervision was made by a medical doctor and by the principal investigator. Data collectors and the supervisor were trained for one day on the study instrument, consent form, how to maintain confidentiality and data collection procedures based on WHO SRQ-20 training guidelines (61).

#### ***4.7.3 Data collection method and data collectors***

The study subjects were given a general introduction of the study as well as the opportunity to ask questions about the study and how to complete the SRQ, to measure mental distress. Two nurses and two medical students distributed the questionnaire at the beginning or at the end of the classes. The instructors gave permissions after clear explanation of the objectives of the study and confidentiality issues. The principal investigator and the supervisor checked the completed questionnaires for consistency and completeness on a daily basis.

#### **4.8 Data quality management**

A one day training of data collectors was given on how to collect the data. The data collection methods, tools and how to handle of the ethical issues was discussed on with the data collectors based on WHO SRQ-20 user's guideline. Pre-test was conducted on 30 students (5% of the sample size) before the main study to identify potential problems in the proposed study such as data collection tools and to check understandability of the tool and the performance of the data collectors and questionnaires used in the pre-test was not included in the analysis as part of the main study. English version of questionnaire was used for data collection. Regular supervision by the supervisor and principal investigator was made to ensure that all necessary data are properly collected. Each day during data collection, filled questionnaires was checked for completeness and consistency. The collected data was edited and processed timely and was entered from a paper on-to the computer twice in a time at once.

#### **4.9 Data processing, analysis, interpretation and presentation**

Once all necessary data were obtained, it was checked for completeness and a particular questionnaire with incomplete data was assessed. Data were cleaned, coded and entered in to and analyzed by SPSS version 16 for windows. Bivariate logistic regression was done to explore factors associated with mental distress and find out candidate variables for the multivariable logistic regression to identify predictors of mental distress. Variables that showed statistical significant association on bivariate analysis with p-value of less than 0.25 were entered into multivariable logistic regression. Then, variables which showed statistical significant on multivariable regression association with p-value less than 0.05 were considered as predictors of mental distress. Measures of strength of the association with its level of confidence i.e. odds ratio (OR) with 95% Confidence Intervals were computed. Complex steps of model construction and the different techniques of checking goodness of fitness of the model were considered and found as fit. Measures of strength of the association with its level of confidence i.e. odds ratio (OR) with 95% Confidence Intervals were done. The open-ended question was analysed by listing thematic categories, then counting the groups.

#### **4.10 Operational definitions of concepts**

##### ***Mental distress***

**Mental Distress:** dichotomized as present or absent based on the SRQ\_20 score

**Present mental distress:** Having a SRQ\_20 score of 11 and above

**Absent mental distress:** Having a SRQ\_20 score of below 11

##### **Substances Use**

**Khat chewing-**taking khat (*Catha edulis forsk*) in terms of average number of bundles consumed on a chewing day and number of days per week this amount was taken

**Alcohol use frequency-**consumption of any type alcohol in terms of average number of drinks consumed on a drinking day and number of days/month this amount was consumed.

**Cigarette smoking-** average number of any type of cigarettes smoked per day and the duration of smoking per week.

**Current users:** when students use specified substance (for non-medical purposes) in the last year

**Ever users:** when students use specified substance (for non-medical purposes) even once in their life time.

**Common stressors:** important stressors experienced by the students at the time of data collection



#### **4.11 Ethical consideration**

The study was conducted after ethical clearance was obtained the ethical review board of College of Public Health and Medical Sciences, Jimma University. Official letter was written to University of Hargeisa and the ethical clearance was reviewed by the University of Hargeisa ethical review board. Written consent of participants to be included in the study was obtained before interviewing. Confidentiality of the data was ensured for the participants. None of the participants were with severe mental distress and needed interventions during data collection period.

#### **4.12 Dissemination plan**

Research findings will be presented to the academic and hospital staffs of Jimma University, University of Hargeisa and the ministry of health of Somaliland. Copies of the paper will be submitted to department of psychiatry, College of Public health & Medical Sciences of Jimma University, university of Hargeisa and to other concerned bodies to whom recommendations will be forwarded. The research paper will be presented in health professional organizations, annual meetings, professional conferences and trainings. Attempts will be made to publish the work on a scientific journal to make accessible to all individuals who may want to use it

## **5. Results**

### **5.1 Socio-demographic Characteristics of the respondents**

From a total of 600 participants selected for this study, the response rate was 570(95%). The main reason for these non-responses was some students did not return back from vacation. Among the five hundred seventy students that participated in the study, three hundred fifty eight students (62.8%) were males and 212(37.2 %) were females, aged in between 18 to 46 years. Majority of the respondents 422 (74.0%) were between the age group of 18-24 years. The mean age of the study population was found to be 23.48, with SD ( $\pm$  4.38) years.

Four hundred sixty seven (81.9 %) of the students' parental place of residence were in Hargeisa, while the rest were not. Five hundred one (87.9%) of the subjects were unmarried, where as 69 (12.1 %) of them were married. Two hundred seventy two (47.7%) of the study subjects were first persons in rank in their families who joined the university (table 1).

By academic year of enrollment of the students, one hundred thirty seven (24%) of the students were first years, 156 (27.4 %) were fourth year undergraduate students. One hundred fifteen (20.2 %) of them were from the faculty of science and technology, 107 (24.9 %) of the students were from the faculty of business, 93 (16.3 %) of them were from the faculty of information communication technology, 81(14.2%) of them were from the faculty of economics (table 1).

Regarding financial status of the students, 409(71.8%) had monthly income of up to \$100, and the rest, (28.2%) had monthly income of greater than \$ 100. Their income came from different sources including their parents (51.2%), brother/sisters or relatives (25.2%), and from part-time jobs (school teachers, private company/governmental institution workers). Two hundred four students (35.8%) had part time job to financially support themselves (table1).

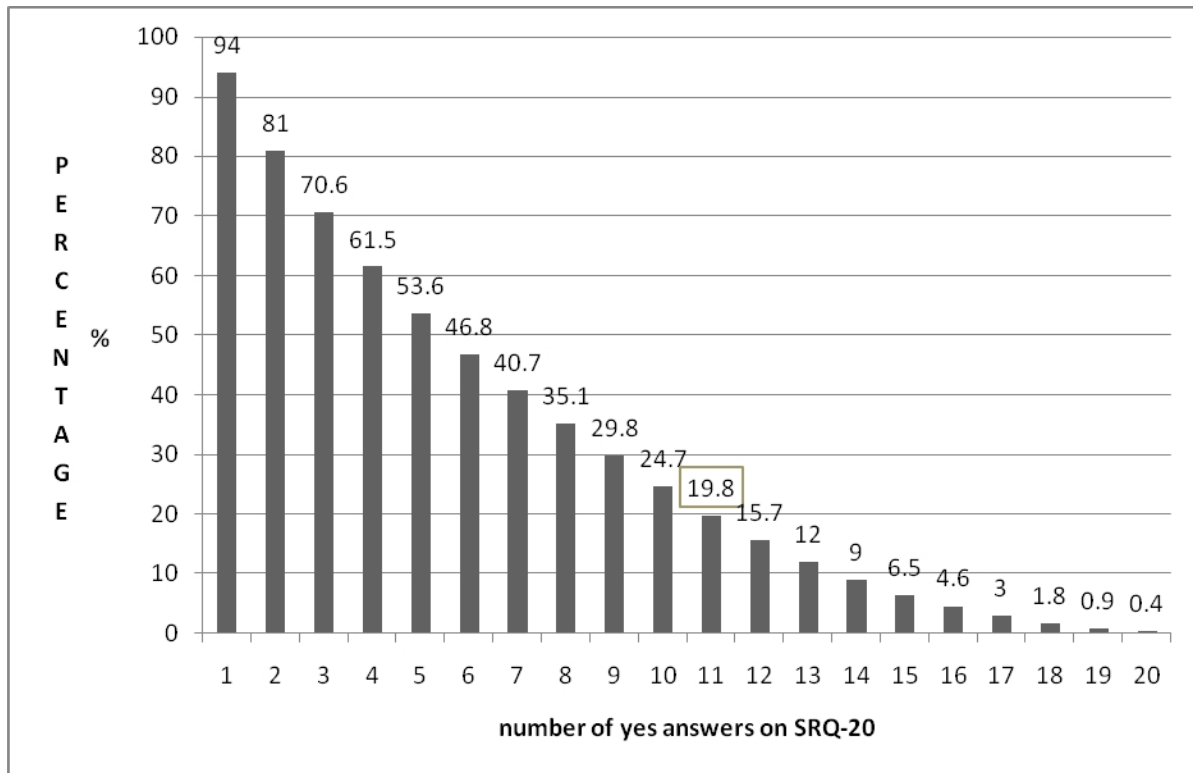
Table 0-1 Socio-demographic characteristics of the respondents n=570, UoH, Oct.2013

Characteristics	Frequency		
	(n)	(%)	
Age in categories	18-24	422	74.0
	25-46	148	26.0
	Mean +/-SD	23.5 ± 4.3	
Sex	Male	358	62.8
	Female	212	37.2
Level of education	1st year	137	24.0
	2nd year	140	24.6
	3rd year	137	24.0
	4 <sup>th</sup> year	156	27.4
Marital status	Single	501	87.9
	Married	69	12.1
Monthly income	≤100 \$	409	71.8
	>100 \$	161	28.2
Financial status	Nearly sufficient	279	48.9
	More than enough	131	23.0
	Not enough for tuition	91	16.0
	Not enough for living	69	12.1
Source of financial support	Parent	292	51.2
	Self	107	18.8
	Relative	72	12.6
	Others	27	4.7
Part-time job	Yes	204	35.8
	No	366	64.2
Family in Hargeisa	Yes	467	81.9
	No	103	18.1
1ST person in family joined university	Yes	272	47.7
	No	298	52.3
Field of study	Science and tech.	115	20.2
	Business	107	18.8
	ICT	93	16.3
	Economics	81	14.2
	Law	36	6.3
	Arabic and Islamic	36	6.3
	Medicine	34	6.0
	Engineering	40	7.0
Education	28	4.9	

\*others –spouse, friends, scholarships or charity organizations

## 5.2 Prevalence of Mental Distress

Using a cutoff point of 11 out of the 20 SRQ items, taken from previous literatures, 113 (19.8%) of the respondents had mental distress, in the last 4 weeks prior to data collection period. Distribution of the scores of SRQ20 showed a range between 0 up to 20 and a mean score of 6.4 with standard deviation of  $\pm 4.6$  (fig 0-4).



**Figure 0-4 Percentage Distribution of scores for cut-off point of the SRQ-20**

## 5.3 Bivariate analysis

### 5.3.1 Socio-demographic factors associated with mental distress

Female students were at higher risk of mental distress compared to male students with {COR of 2.38; 95% CI (1.56, 3.61)}. Students who had monthly income of up to \$100 per month were at higher risk of mental distress compared to students who had monthly income greater than \$100 with {COR of 2.07; 95% CI, (1.23, 3.50)}. However, mental distress did not have statistically significant association between age, level of education, marital status, family place, financial supports, or other variables in this study (table 2).

### 5.3.2 Substance use and mental distress

Out of the total subjects, 172(30.2%) of the students reported ever using khat once in their lifetime, and 110(19.3%) of the subjects reported using khat during the 12 months prior to the data collection period. Eighty six (15.1%) of the students reported ever smoking cigarette in their lifetime while 52(9.1%) reported smoking for the previous 12 months. Thirty nine (6.8%) of the subjects reported ever using Shisha in their lifetime and 25(4.4%) were using it for the previous 12 months. However, only 15 (2.6%) of the students had ever used alcohol in their lifetime while 10(1.8%) reported using it for the previous 12 months.

Among the students who practiced Khat chewing reported their major reasons of chewing khat to increase work or academic performance 42 (33.3 %), to release from stress and tension 29(23 %), to relief from stress due to academic dissatisfaction 11(8.7%), to be sociable or get acceptance or peer influence 16(12.7%), to get personal pleasure 24 (19.0%).

In bivariate logistic regression analysis, students who used khat for the previous twelve months were at higher risk of mental distress than those who did not chew khat {Crude- OR= 1.81, 95% CI (1.12, 2.92}. Also, students who used Shisha for the previous 12 months were at higher risk of mental distress than those who did not {Crude- OR= 3.41, 95%CI (1.51, 7.74)}. Other substances like alcohol, and cigarettes did not show any statistically significant associations with mental distress in this study (table 2).

### ***5.3.3 Relational satisfaction associated with mental distress***

For the social relational satisfaction of the students at Hargeisa University, four hundred ninety nine (87.5%) of them had close friends, while 71(12.5%) did not have. Five hundred twenty one, (91.5%) of the students had satisfying relationship with their friends while the rest did not have. on the other hand, five hundred forty six, (95.8%) of the students had satisfying relationship with their parents, while the rest did not have.

In bivariate regression analysis, Students who had no close friends were at higher risk of mental distress compared to students who had {Crude-OR=2.54; 95% CI, (1.48, 4.35)}. Also, Students who reported not having satisfying relationship with their friends and parents were at higher risk of mental distress than students who had satisfying relationship with their friends and parents, with {Crude- OR= 2.31; 95% CI, (1.06, 5.00)} and {Crude- OR= 3.43; 95% CI, (1.25 9.46)}, respectively (table 2).

### ***5.3.4 Academic related factors associated with mental distress***

Academic year of study, field of study and interest, grade point averages, and the distance of the university from the students homes were compared with their logistic regressions (table 2). Crude odds ratio between academic related factors and mental distress were checked, however none of these factors were candidates on multivariable regression analysis and had any significant statistical associations in bivariate analysis.

## 5.4 Multivariable analysis

### 5.4.1 Factors that independently predicted mental distress

All of the above constructs, i.e. socio-demographics, substances use, relational factors, and academic related factors, were considered in the multivariate logistic analysis to identify factors independently associated with mental distress. Goodness-of-fit test checking for different models of constructs was performed and was found as fit.

On the multivariable logistic regression, students who had monthly income of up to \$ 100 were at higher risk of mental distress than students who had monthly income greater than \$100, {AOR=1.96; 95% CI (1.15, 3.35)}. The open-ended question revealed financial problems as one of the most common stressors that students experienced at the time the study was being done. One student had stated “*financial problems and finding sustained job*’. Students’ financial problems were mostly related to fear of unemployment, as another student had stated “*I have a stressor because every time i am thinking of getting job*”. Another student at UoH said this “*I am stressed by the future on how to get a job after graduating*’

On the multivariable logistic regression, also students who had not satisfying relationship with their friends were at higher risk of mental distress compared to students who had satisfying relationship with their friends, with {AOR=2.55; 95% CI (1.12,5.79)} (table 2). Findings from open-ended question also confirmed, that quarrelsome friends, marriage preparations and family problems, were most recent stressors for them.

In addition, in the multivariable logistic regression, female students were at higher risk of mental distress than male students {AOR=2.78; 95% CI (1.69, 4.55)} (table 2). Information gained from the student’s open-ended question, also pointed out that academic related factors were among their sources of stressors. They described that they had felt burdens from the long hours of studying for examinations. The medical students also complained from the oral clinical examinations. Some of them mentioned that, they were stressed by the distance of the campus from their homes.

Khat use, having close friendship, shisha smoking and other factors, which had statistical associations with mental distress in bivariate analysis, had lost their statistical significance association for adjusting other variables mentioned in above (table 2.)

Table 0-2 Factors independently affecting mental distress among respondents (AOR) at UoH, October, 2013(n=570)

Characteristics		Mental distress				COR,95% CI	AOR, 95% CI
		YES		NO			
		(n)	(%)	(n)	(%)		
Age in years	25-47	22	14.9	126	85.1	1	1
	18-24	91	21.6	331	78.4	1.57(0.96 2.62)	1.58(0.89 2.82)
Sex	Male	52	14.5	306	85.5	1	1
	Female	61	28.8	151	71.2	2.38(1.56 3.61)*	2.78(1.69 4.55)*
Marital status	Married	10	14.5	59	85.5	1	1
	Single	103	20.6	398	79.4	1.53(0.75 3.09)	1.31(0.61 2.84)
Family in	No	27	26.2	76	73.8	1	1
Hargeisa city	Yes	86	18.4	381	81.6	0.63(0.39 1.04)	0.62 (0.36 1.07)
Source of financial support	Parent	62	21.2	230	78.8	1	1
	Relative	8	11.1	64	88.9	0.46(0.21 1.02)	0.44(0.19 1.03)
	Bro/sister	12	16.7	60	83.3	0.74(0.38 1.46)	0.62(0.29 1.30)
	Self	27	25.2	80	74.8	1.25(0.74 2.10)	1.46(0.81 2.65)
	Others*	4	14.8	23	85.2	0.64(0.21 1.93)	0.45(0.12 1.40)
Monthly income	>100 \$	20	12.4	141	87.6	1	1
	≤100 \$	93	22.7	316	77.3	2.07(1.23 3.50)*	1.96(1.15 3.35)*
Financial status not enough	For tuition	18	19.8	73	80.2	1	1
	For living	16	23.2	53	76.8	1.22(0.57 2.62)	1.22(0.57 2.62)
	Nearly sufficient	45	16.1	234	83.9	0.78(0.42 1.43)	0.78(0.42 1.43)
	More than enough	34	26.0	97	74.0	1.42(0.74 2.71)	1.42(0.74 2.71)
Part time job	Yes	32	15.7	172	84.3	1	1
	No	81	22.1	285	77.9	1.52(0.97 2.40)	0.63(0.34 1.16)
1 <sup>st</sup> person joined university	No	58	19.5	240	80.5	1	1
	Yes	55	20.2	217	79.8	1.05(0.69 1.58)	1.05(0.69 1.58)
Close friends	No	25	35.2	46	64.8	1	1
	Yes	88	17.6	411	82.4	2.54(1.48 4.35)*	0.63(0.34 1.16)
Satisfaction of relationship with friends	Very satisfied	62	17.8	286	82.2	1	1
	Satisfied	36	20.8	137	79.2	1.21(0.77 1.92)	1.32(0.83 2.10)
	Not satisfied	11	33.3	22	66.7	2.32(1.06 5.00)*	2.55(1.12 5.79)*
	Not satisfied at all	4	25.0	12	75.0	1.54(0.48 4.93)	1.55(0.48 5.00)
Satisfaction of relationship with parents	Very satisfied	92	18.5	406	81.5	1	1
	Satisfied	11	22.9	37	77.1	1.31(0.64 2.67)	1.31(0.62 2.81)
	Not satisfied	7	43.8	9	56.2	3.43(1.25 9.45)*	2.86(0.98 8.33)
	Not satisfied at all	3	37.5	5	62.5	2.65(0.62 11.28)	3.25(0.68 15.5)
Level of Education	1st year	27	19.7	110	80.3	1	1
	2nd year	25	17.9	115	82.1	0.89(0.48 1.62)	0.81(0.42 1.55)
	3rd year	33	24.1	104	75.9	1.29(0.73 2.30)	1.24(0.67 2.30)



Field of study	4th year	28	17.9	128	82.1	0.89(0.50 1.60)	0.91(0.49 1.69)
	Education	5	17.9	23	82.1	1	1
	Medicine	1	2.9	33	97.1	0.14(0.02 1.27)	0.19(0.02 1.79)
	Business	25	23.4	82	76.6	1.40(0.48 4.07)	1.58(0.53 4.66)
	Economics	13	16.0	68	84.0	0.88(0.28 2.73)	0.95(0.30 3.01)
	Science & tech	35	30.4	80	69.6	2.01(0.71 5.72)	2.04(0.70 5.92)
	Arabic &Islam	6	16.7	30	83.3	0.92(0.25 3.39)	0.84(0.22 3.14)
	ICT	10	10.8	83	89.2	0.05(0.17 1.78)	0.71(0.22 2.32)
	Engineering	9	22.5	31	77.5	1.33(0.39 4.52)	1.69(0.49 5.86)
	Law	9	25.0	27	75.0	1.53(0.45 5.23)	1.82(0.52 6.33)
Interest of field of study	very interested	78	18.3	349	81.7	1	1
	interested	31	25.6	90	74.4	1.54(0.96 2.48)	1.57(0.94 2.63)
	not interested	2	16.7	8	80.0	1.12(0.23 5.37)	1.52(0.30 7.67)
	Not interested at all	2	16.7	10	83.3	0.89(0.19 4.16)	0.07(0.14 3.27)
Cumulative GPA.	1.50-2.00	20	25.0	60	75.0	1	1
	2.01-2.50	11	18.6	48	81.4	0.69(0.30 1.57)	0.71(0.30 1.72)
	2.51-3.00	21	23.1	70	76.9	0.90(0.45 1.82)	0.78(0.36 1.72)
	3.01-3.50	33	20.9	125	79.1	0.79(0.42 1.49)	0.83(0.41 1.66)
	3.51-4.00	28	15.4	154	84.6	0.55(0.29 1.04)	0.65(0.32 1.35)
Distance of the university	<2.1 km	33	24.1	104	75.9	1	1
	2.1-3.0km	24	16.9	118	83.1	0.64(0.36 1.15)	0.67(0.36 1.23)
	3.1-5.0km	31	16.9	152	83.1	0.64(0.37 1.11)	0.70(0.39 1.24)
	≥5.1 km	25	23.1	83	76.9	0.96(0.52 1.72)	1.06(0.56 1.99)
Khat use	Users	31	28.2	79	71.8	1.81(1.12 2.92)*	1.79(0.99 3.26)
	Non users	82	17.8	378	82.2	1	1
Khat use(male)	Users	29	20.7	111	79.3	2.15 (1.20 3.88)*	1.74(0.76 3.87)
	Non users	24	10.8	198	89.2	1	1
Cigarette use	Users	13	25.0	39	75.0	1.39(0.72 2.71)	0.52(0.20 1.34)
	Non users	100	19.3	418	80.7	1	1
Shisha use	Users	11	44.0	14	56.0	3.41(1.50 7.74)*	2.59(0.79 1.09)
	Non users	102	18.7	443	81.3	1	1
Alcohol use	Users	4	40.0	6	60.0	2.76(0.76 9.94)	0.89(0.19 4.27)
	Non users	109	19.5	451	80.5	1	1
Others like cannabis use	Users	2	22.2	7	77.8	1.16(0.24 5.65)	0.21(0.03 1.35)
	Non users	111	19.8	450	80.2	1	1

\* =statistically significant \*others (spouse, friend or charity, etc.)

## **6. Discussions**

### **6.1 prevalence of mental distress**

This study investigated the prevalence and associated factors of mental distress among regular undergraduate students at UoH in October, 2013. Using a cutoff point of 11 out of the 20 SRQ items, 113 (19.8%) of the respondents had mental distress. We found that Gender, low income, not having satisfying friendship were the associated factors with mental distress in this study.

A Prevalence of 19.8%, which is nearly one-fifth of the study subjects were mentally distressed in this study at UoH. This proportion was consistent with the prevalence of mental distress in student population of other studies which used the same instrument with the one used in this study. It was comparable to the prevalence of mental distress found in study at Haremaya University in Harar, Ethiopia, which was 19.3%, (20).

The prevalence in this study was also comparable to a cross-sectional survey conducted in 2011 in undergraduate students in Adama university, eastern Ethiopia, that used SRQ-20 with a cutoff of 11 and above that resulted a prevalence of 21.6%( 22).

The proportion found in this study was comparable to another study which assessed the psychological morbidity, and sources of stress in students at Nepal which found an overall prevalence of psychological morbidity of 20.9% (24).

Also the prevalence in this study was equivalent with that found in a study of socio-demographic, General Health Status and Mental Health Profile at NHL Municipal medical college of Ahmadabad district in India, which found an overall 23.7% prevalence (62)

But the prevalence found in this study was lower than the results of prevalence of mental distress of students in other studies. It was lower in study done among Hawassa University students in mental distress which had a prevalence of 49% (21).The prevalence found in this study was lower than the prevalence of emotional distress among Malaysian medical students in Malaysian universities which was 41.9% (26). Compared to a study of Psychological stress in undergraduate Medical students at S N Medical College, Bagalkot, Karnataka (India), which

resulted that 42.63% of the study subjects had experienced less/moderate stress and 47.01% of them had experienced severe stress (27).

These differences could be attributed due to differences in socio-demographic characteristics. Also different scales used could have produced the different results in these studies. Parental and social support was strong in Somaliland. Majority of the students' parental place of residence was in Hargeisa hence, environmental change, which was minimal at UoH, might have positively contributed to mental wellness of the students and resulted to have lower mental distress than others mentioned in above.

## **6.2 Gender and mental distress**

In this study we found that female students were at higher risk of mental distress compared to male students. This is also comparable to other studies that were done by other researchers in different places like one Nigerian study found that depression was two times more prevalent among female university students (63). A study among female doctors had higher levels of anxiety and depression (64). In another cross-sectional study at a College of Medicine in Saudi Arabia, the prevalence of stress was higher among female students than among male students (41). In a study to examine the prevalence of depression, anxiety and stress among a group of Turkish university students found that stress and anxiety scores were higher among female students (51).

Similarly, three studies conducted among medical students from Sweden, Spain and Iran found that females had higher levels of emotional disorders compared to males (65, 66 & 67). A systemic review of emotional disorder among US and Canadian medical students suggested psychological disorder was probably higher among female students (38). Another study found that female students' mean anxiety and stress scores were significantly higher compared to male students. The same results were obtained from the study by Wong et al. (68). Study done in Iran on depression prevalence and related factors has shown that female sex was among the most important risk factors of depression (69). It is reported that in most common mental disorders in young people is the sex differences and women are 1.5–3 times more likely to have depressive

disorders and attempt self-harm, due to might be differences in the rates of exposure to biological and environmental risk factors and different interactions between these factors in the sexes (73).

### **6.3 Income and mental distress**

Income is a known factor which positively contributes to the mental wellness and it was reported among French medical students that students with below normal of income were higher risk of mental distress (70). In study on Prevalence and Correlates of Depression, Anxiety, and Suicidality among University Students found that Students reporting financial struggles were at higher risk for mental health problems (72).

In this study income as a risk for mental distress is supported by the fact that there was huge gap of income among the university of Hargeisa students. Students at UoH might not have sufficient income to finances in their education. Style of University of Hargeisa is different from other Universities like Jimma, in that the students in University of Hargeisa should pay of all costs of education including accommodation and tuition fee by themselves. It might become burden for them to accommodate all of these. Students at the university had made several protests against raised fee, of which its' last one just happened before now where they were demanding to suspend from added forty five dollars to the school fee.

### **6.4 Relational satisfaction and mental distress**

Students who had unsatisfying relationship with their friends were at higher risk of mental distress, in this study. In consistent with this, it was found that students which felt relational dissatisfaction with their friends had at higher risk of mental distress in other studies.

One study has confirmed that the prevalence of depression was higher in absence of strong social support (71). Study done in Hawassa University also found that difficulty in making friends and conflicts in fellows with dormitories where associated with mental distress (21).The Study done in Adama University in Eastern Ethiopia reported students who had conflicts with their fellow students for different reasons were at higher risk of mental distress (22).The reason might be using similar tools and close proximity of socio demographics between students in Ethiopia and in Somaliland.

There is an established fact, of associative relationship of mental distress and substance uses. There are studies which had predicted associated relationship of mental distress and khat use (58).

Absence of relationship between mental distress and khat use was also found in other studies (20). By the fact that there was no association between khat and mental distress in this study could be as a result of small sample size or the design of this study of students.

### **6.5 Strength of the study**

One of the strengths for this study was the openly asked question on recent most stressors for the students in which important findings of it was incorporated into our main quantitative findings. Other Strengths of this study included, the high response rate found, which shows it is supportive environment for doing further studies. This was the first study of its kind; by itself is a pioneer study for future researchers and mental health service planners by providing relative genuine informations.

### **6.6 Limitations of the study**

During undertaking of this study, it was not without limitations. Firstly, the cross-sectional study of plausible causality, like other studies holds true also in this study. Secondly, the topic studied was sensitive issue and students might had not fully disclosed there information, although it was tried to make sure that students were well understood of the purpose of study, and the data collectors were trained very well to compensate this. There were no any scales validated inside Somaliland and we found it difficult to use with a validated scale on this.

## **7. Conclusion**

This study investigated prevalence of mental distress and associated factors among undergraduate students at UoH in Somaliland. SRQ-20 scale assessed the mental distress of the students. An open-ended question was asked in the questionnaire.

A number of points can be drawn from this study. First, the prevalence found was substantial, about one-fifths of the students at UoH in 2013 were mentally distressed. Secondly, female students were at higher risk of mental distress than male students. Thirdly, it was found that students who had lower income were at higher risk of mental distress than students with higher income. Fourthly, it was found that students who had unsatisfying relationship with their friends were at higher risk of mental distress than students who had satisfying relationship with their friends. Qualitative findings in this study conformed to the quantitative findings, by which the identified sources of stressors of students reported in the openly asked question were as financial problems, fear of employment, social relational problems and academic demand problems.

### **7.1 Recommendations**

Recommendation is made in general to any interested bodies, groups who may want to do the recommended points, and specifically these recommendations goes to the following places.

#### **To- the administration of University of Hargeisa**

- ✚ Founding mechanisms students can interact positively together like Student clubs, sports and more extra-curricular activities to enhance their psychological wellness.
- ✚ Establishment of student advisory mechanisms to monitor and regulate their studies, and their mental wellness, especially for female students.
- ✚ Revising on curriculum to meet with the needs of students to prepare them for better employment opportunities.
- ✚ Facilitating students on getting financial support sources for their studies, like student funds, grants or scholarships.

- ✚ Establishment of student mental health clinic with good referral linkage to provide treatments and counseling/psychotherapies for psychologically ill students.

#### **To- Researchers**

- ✚ Further study with different and validated instrument, studying with better designs to establish causal associations.
- ✚ To further investigate why female students were at higher risk of mental distress than male students at the UoH in this study.

#### **To – the ministry of Health of Somaliland**

- ✚ To integrate mental health care services into university undergraduate students of Somaliland.
- ✚ To facilitate and encourage, organizations, researchers and others to study or intervene on mental health of students.

#### **To – the Ministry of Education of Somaliland**

- ✚ To supplement mental health education on curriculum of the students at university
- ✚ To organize mental health trainings and workshops at the universities.

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# Annex 1. Questionnaire

## Information Sheet

### Dear students

In the case of mental health promotion of the young educated people to understand the existing magnitude of some common mental disorders, studies in higher learning institute is found to be of great significance. In line with this a study is proposed to assess the prevalence and factors which contribute for psychological distress and the result will help the university to identify those factors and address them to improve the overall cognitive development of the students and thereby contribute for the goal of producing skilled man powers. You are kindly requested to complete this questionnaire. There is no need of writing your name or id number on the format and we would like to reassure you that the information you are going to provide will be kept confidential. It is your right to participate or refuse to involve in the study. If you do not want to participate in the study, you can put the format in the table upside down. But your honest participation will have contribution to generate valid information. So please take these questions to answer. If you need clarification please don't hesitate to ask the facilitators for clarification.

**I agree to participate**

**I don't agree to participate**

### Consent form:

I have been briefly informed about the study and I clearly understood its objectives. Since it doesn't affect my personal life, I don't need any remedy.

Consequently, I am here to approve my consent to take part in the study with my signature.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Thank you**

## Part I. Background socio-demographic characteristics

1. Age in complete year \_\_\_\_\_
2. Sex
  - A. Male
  - B. Female
3. What is your religion?
  - A. Islam
  - B. Others specify \_\_\_\_\_
4. What is your ethnicity?
  - A. Somali
  - B. Others specify \_\_\_\_\_
5. What is your relationship status now?
  - A. Single
  - B. Married and living together
  - C. Married but not living together
  - D. Divorced
  - E. Widowed
  - F. Others specify \_\_\_\_\_
6. What is the level of your study year?
  - A. 1st year
  - B. 2nd year
  - C. 3rd year
  - D. 4<sup>th</sup> year
  - E. 5<sup>th</sup> year
  - F. 6<sup>th</sup> year
7. What is your field of study?
  1. Faculty of Law
  2. Faculty of Medicine
  3. Faculty of Business
  4. Faculty of Science and technology



5. Faculty of Arabic and Islamic studies
  6. Faculty of ICT and distance learning
  7. Faculty of engineering
  8. Faculty of education
  9. Faculty of economics
8. How do you interest in your field of study?
    - a) Very interested
    - b) Interested
    - c) Not interested
    - d) Not interested at all
  9. Are you the first person among your families to join university?
    - A. Yes
    - B. No
  10. What was your last semester's cumulative grade (CGPA)? \_\_\_\_\_ (it works for only 2<sup>nd</sup> year and above students)
  11. Are your family live here in Hargeisa
    - A. Yes
    - B. No
  12. What is the distance in (km) from campus of the University of Hargeisa to the place where you currently live \_\_\_\_\_
  13. Who financially support your study?
    - A. My parents
    - B. My relative
    - C. Brother/sister
    - D. My self
    - E. Other-----
  14. Do you have a part-time job?
    - A. No
    - B. Yes, it is .....
  15. How do you feel about your financial status?

- A. Not enough for tuition fee
- B. Not enough for living condition
- C. Nearly sufficient
- D. More than enough

16. What is your monthly personal income in \$ USD? \_\_\_\_\_

17. Do you have close friends?

- A. Yes
- B. No

17. How do you feel about your relationship with friends?

- A. Very satisfied
- B. Satisfied
- C. Not satisfied
- D. Not satisfied at all

18. How do you feel about your relationship with parents/ family?

- A. Very satisfied
- B. Satisfied
- C. Not satisfied
- D. Not satisfied at all

19. What are the most important stressors for you at present ?( answer in your own words)--

-----  
 -----  
 -----

***Part II. The Self-Reporting Questionnaire (SRQ-20)***

The following questions are related to certain pains and problems that may have bothered you in the last **30 days**. If you think the question applies to you and you had the described problem in the last **30 days**, answer **YES (make right sign)**. On the other hand, if the question does not apply to you and you did not have the problem in the last **30 days**, answer **NO (make right sign)**. If you are unsure about answering a question, please give the best answer you can.

<b>Q. No.</b>	<b>Encountered health problems within the last 4 weeks</b>		
1.	Do you often have headaches?	Yes	No
2.	Is your appetite poor?	Yes	No
3.	Do you sleep badly?	Yes	No
4.	Are you easily frightened?	Yes	No
5.	Do your hands shake?	Yes	No
6.	Do you feel nervous, tense or worried?	Yes	No
7.	Is your digestion poor?	Yes	No
8.	Do you have trouble thinking clearly?	Yes	No
9.	Do you feel unhappy?	Yes	No
10.	Do you cry more than usual?	Yes	No
11.	Do you find it difficult to enjoy your daily activities?	Yes	No
12.	Do you find it difficult to make decisions?	Yes	No
13.	Is your daily work suffering?	Yes	No
14.	Are you unable to play a useful part in life?	Yes	No
15.	Have you lost interest in things?	Yes	No
16.	Do you feel that you are a worthless person?	Yes	No
17.	Has the thought of ending your life been on your mind?	Yes	No
18.	Do you feel tired all the time?	Yes	No
19.	Do you have uncomfortable feelings in your stomach?	Yes	No
20.	Are you easily tired?	Yes	No

**Part III. Questions to assess substance use**

**3.1 The following three questions are specific to Khat chewing Practices in particular**

<b>1.</b>	Have you ever used khat?	Yes	No. if no skip to section IV
<b>2.</b>	Have you used Khat in the last 12 months?	Yes	No
<b>3.</b>	If yes, What is your reason to use khat		
a)	To increase work or academic performance	Yes	No
b)	To release from stress or tension	Yes	No
c)	Due to academic dissatisfaction	Yes	No
d)	To get acceptance from others or be sociable	Yes	No
e)	To get personal pleasure	Yes	No
f)	For religious purposes	Yes	No
g)	Others, specify_____		
<b>4.</b>	How often do you chew khat?		
a)	Daily	Yes	No
b)	3 to 4 days a week	Yes	No
c)	1 to 2 days a week	yes	No
d)	1 to 3 days a month	Yes	No
	Monthly or less	Yes	No
<b>5.</b>	How much khat do you usually use per session?		
a)	Less than one bundle	Yes	No
b)	One bundle	Yes	No
c)	More than one bundle	Yes	No
d)	Others, specify	Yes	No
<b>6.</b>	In what settings do you usually use khat?		

a)	Alone	Yes	No
b)	with others	Yes	No
c)	At home	Yes	No
d)	in a café	Yes	No
7.	How long does each of your session typically last?		
a)	2-4 hours	Yes	No
b)	4-8 hours	Yes	No
c)	More than 8 hour	Yes	No
7.	Do you ever use khat together with other substances?		
a)	Shisha(badeecad)	Yes	No
b)	Cigar	Yes	No
c)	Others , specify .....	Yes	No
8.	How much money do you spend on khat in an average week?		
a)	1-5 USD	Yes	No
b)	5-10 USD	Yes	No
c)	More than 10 USD	Yes	No
9.	Are there any disadvantages to using khat? You can choose more than one answer		
a)	difficulty to sleep	Yes	No
b)	get tiredness	Yes	No
c)	Paranoid feeling,	Yes	No
d)	Anxious feeling	Yes	No
f)	Irritability, fight with others.	Yes	No
g)	Depressed feeling	Yes	No
h)	Unable to work ,or go school	Yes	No
10.	How long have you been using khat now ..... .....yrs		

### 3.2 Alcohol

1.	Have you ever drink alcohol?	Yes	No
2.	Do you drink alcohol in the last 12 month period?	Yes	No
3.	How often do you have a drink containing alcohol?	Yes	No
A	4 or more times a week	Yes	No
B	2 to 3 times a week	Yes	No
C	2 to 4 times a month	Yes	No
D	Monthly or less	Yes	No

### 3.3 Tobacco smoking

<b>1</b>	Have you ever smoke cigarette?	<b>Yes</b>	<b>No</b>
<b>2</b>	Do you smoke cigarette in the last 12 month period?		
<b>3</b>	How often do you have smoke cigarette?	<b>Yes</b>	<b>No</b>
<b>A</b>	4 or more times a week	<b>Yes</b>	<b>No</b>
<b>B</b>	2 to 3 times a week	<b>Yes</b>	<b>No</b>
<b>C</b>	2 to 4 times a month	<b>Yes</b>	<b>No</b>
<b>D</b>	Monthly or less	<b>Yes</b>	<b>No</b>

### 3.4 Shisha (badeecad) smoking

<b>1.</b>	Have you ever smoke shisha?	<b>Yes</b>	<b>No</b>
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<b>2.</b>	Do you smoke shisha in the last 12 month period?	<b>Yes</b>	<b>No</b>
<b>3.</b>	How often do you have smoke shisha?	<b>Yes</b>	<b>No</b>
<b>A</b>	4 or more times a week	<b>Yes</b>	<b>No</b>
<b>B</b>	2 to 3 times a week	<b>Yes</b>	<b>No</b>
<b>C</b>	2 to 4 times a month	<b>Yes</b>	<b>No</b>
<b>D</b>	Monthly or less	<b>Yes</b>	<b>No</b>

### **3.5 Substances such as Hashish and others**

<b>1.</b>	Have you ever used in your life substances / Such as hashish, Pat, Kaya, Joyint, Hait, Cannabis, Ganja, and or Heroin and others?	<b>Yes</b>	<b>No</b>
<b>2.</b>	Do you use substances / Such as hashish, Pat, Kaya, Joyint, Hait, Cannabis, Ganja, and or Heroin and others in the last 12 months period?	<b>Yes</b>	<b>No</b>
<b>3.</b>	How often do you use hashish, Pat, Kaya, Joyint, Hait, Cannabis, Ganja, and or Heroin and others?	<b>Yes</b>	<b>No</b>
<b>A</b>	4 or more times a week	<b>Yes</b>	<b>No</b>
<b>B</b>	2 to 3 times a week	<b>Yes</b>	<b>No</b>
<b>C</b>	2 to 4 times a month	<b>Yes</b>	<b>No</b>
<b>D</b>	Monthly or less	<b>Yes</b>	<b>No</b>

### **ASSURANCE OF PRINCIPAL INVESTIGATOR**

I, Liban Ahmed, declare that the work presented in this MSc thesis is original. It has not been presented to any other university or institution. Where, the work of other people has been used, reference has been provided. It is in this regard that I declare this work as original mine, and it is here by presented in partial fulfillment of the MSc Degree in Integrated Clinical and Community Mental Health.

Name of the student: \_\_\_\_\_

Date. \_\_\_\_\_ Signature \_\_\_\_\_

#### APPROVAL OF ADVISORS

Name of the first advisor: \_\_\_\_\_

Date. \_\_\_\_\_ Signature \_\_\_\_\_

Date of submission: \_\_\_\_\_

Name of the second advisor: \_\_\_\_\_

Date. \_\_\_\_\_ Signature \_\_\_\_\_

Date of submission: \_\_\_\_\_